A Review of Migratory Bird Sanctuaries in the Atlantic Region-2004

Colin M. MacKinnon, Jason K. Hudson, and Andrew Kennedy

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ABSTRACT

The Canadian Wildlife Service (CWS) administers fifteen Migratory Bird Sanctuaries in the Atlantic Region. These sanctuaries play an integral part in the management and protection of migratory birds and range in size from 10 to 2350 hectares. These protected area reviews are conducted periodically to reassess sanctuaries and to update and incorporate any new information that has become available. Reviews are also necessary to ensure that the sanctuaries fulfill their intended purpose and continue to meet a pre-determined set of criteria (see text).

Data gaps do exist, thus making evaluation somewhat difficult for some sanctuaries. Sites requiring additional information on the timing, numbers and species of migratory birds have been noted. Of the fifteen regional sanctuaries covered under this review, ten meet all four criteria and only one has been identified for possible delisting.

RÉSUMÉ

Dans la région de l'Atlantique, le Service canadien de la faune (SCF) gère quinze refuges d'oiseaux migrateurs, dont la superficie varie entre 10 et 2 350 hectares et qui jouent un rôle essentiel dans la gestion et la protection des oiseaux migrateurs. Ces aires protégées font l'objet d'examens périodiques visant à les réévaluer et à mettre à jour les renseignements les concernant, en y intégrant tout nouvel élément d'information. Les examens sont aussi nécessaires pour s'assurer que les refuges jouent bien le rôle pour lequel ils ont été créés et continuent de satisfaire à un ensemble de critères préétablis. (voir le texte).

En raison de lacunes dans les données, l'évaluation de certains de ces refuges est quelque peu difficile. On a indiqué ceux pour lesquels des renseignements supplémentaires sur la période de fréquentation, sur le nombre et sur les espèces des oiseaux migrateurs qui y séjournent sont nécessaires. Dix des quinze refuges régionaux visés par le présent examen satisfaisaient à l'ensemble des quatre critères et un seul refuge a été jugé susceptible de radiation.

Table of Contents

Page

ABSTRACT i

RÉSUMÉ i

List of Tables and Figures iii

Introduction 1

Amherst Point Migratory Bird Sanctuary 7

Big Glace Bay Lake Migratory Bird Sanctuary 16

Black Pond Migratory Bird Sanctuary 21

Grand Manan Migratory Bird Sanctuary 26

Haley Lake Migratory Bird Sanctuary 31

Inkerman Migratory Bird Sanctuary 36

Isle aux Canes (Green Island) Bird Sanctuary 41

Kentville Migratory Bird Sanctuary 46

Machias Seal Island Migratory Bird Sanctuary 51

Port Hebert Migratory Bird Sanctuary 59

Port Joli Migratory Bird Sanctuary 65

Sable Island Migratory Bird Sanctuary 72

Sable River Migratory Bird Sanctuary 80

Shepherd Island Migratory Bird Sanctuary 86

Terra Nova Migratory Bird Sanctuary 91

Appendix 1 99

Appendix 2 102

List of Tables and Figures

Page

Figure 1. Map of Migratory Bird Sanctuaries in Atlantic Region 2

Table 1. Summary of Current Sanctuaries Meeting Selection Criteria 4

Table 2. Present Sanctuaries in the Atlantic Provinces 5

Table 3. Former Sanctuaries in the Atlantic Provinces 6

Figure 2. Amherst Point Migratory Bird Sanctuary Locator Map 11

Figure 3. Big Glace Bay Lake Migratory Bird Sanctuary Locator Map 19

Figure 4. Black Pond Migratory Bird Sanctuary Locator Map 24

Figure 5. Grand Manan Migratory Bird Sanctuary Locator Map 29

Figure 6. Haley Lake Migratory Bird Sanctuary Locator Map 34

Figure 7. Inkerman Migratory Bird Sanctuary Locator Map 39

Figure 8. Isle aux. Canes (Green Island) Bird Sanctuary Locator Map 44

Figure 9. Kentville Migratory Bird Sanctuary Locator Map 49

Figure 10. Machias Seal Island Migratory Bird Sanctuary Locator Map 55

Figure 11. Port Hebert Migratory Bird Sanctuary Locator Map 62

Figure 12. Port Joli Migratory Bird Sanctuary Locator Map 69

Figure 13. Sable Island Migratory Bird Sanctuary Locator Map 76

Figure 14. Sable River Migratory Bird Sanctuary Locator Map 83

Figure 15. Shepherd Island Migratory Bird Sanctuary Locator Map 89

Figure 16. Terra Nova Migratory Bird Sanctuary Locator Map 95

Introduction

Previous reviews of Sanctuaries in the Maritimes were conducted by B. Carter (1957), A. Smith and W. Whitman (1968), W. Barrow (1973) and A.D Smith (1985). In addition, a review of the technical descriptions of the boundaries of all Sanctuaries was done by A. Smith in 1980. C.M. MacKinnon et al. (1994) completed a review of sanctuaries in Southwest Nova Scotia.

This present review was prompted by a number of factors. Endangered species are now given enhanced protection through the recently passed Species at Risk Act (SARA). New data has been collected since the past review was conducted and this should be incorporated into present decision making. This review also notes the First Nation Reserve closest to each sanctuary. The number of Aboriginal hunters who take part in migratory bird harvesting is comparatively low and, to date, there has been no interest in sanctuaries for this type of activity.

In the Maritime region (NB, NS and PEI), very few Aboriginal individuals are hunting waterfowl. Perhaps one in six in any given Aboriginal organization could be considered waterfowl hunters compared to the 30,655 (CWS National Harvest Survey Statistics) licensed hunters for the region in 2002. Many Aboriginal organizations have observed that hunting moose and other big game was much more important for Aboriginal hunters in their communities and that waterfowl hunts were observed only in years where access to big game was poor (A. Paradis, pers. comm.). Waterfowl do not constitute an important part of traditional Mi'kmaq or Wolastoqiyik culture. However, in Labrador, Inuit, Innu and Métis hunters are actively hunting waterfowl and harvesting eggs from seabird colonies (B. Turner, pers. Comm.). Waterfowl and their eggs constitute an important staple for Labrador's Aboriginal peoples.

Protection of migratory birds in the Atlantic Region under the Migratory Bird Sanctuary (MBS) regulations date back to 1928 when residents of Grand Manan Island approached Federal Migratory Bird Officer Robie Tufts requesting a Sanctuary be established to protect Black Duck. Thus the Region's first federal Migratory Bird Sanctuary was established near Seal Cove, Grand Manan Island, in 1931. Since that time 22 sites have been designated as MBS's, of which seven have been de-listed. Most sanctuaries were established during the 1930's and 1940's through the efforts of local Fish and Game Associations in co-operation with Robie Tufts. During those early years most MBS's were usually established with some biological justification, however, some were of local significance only.

Today, there are 15 MBS's in the Atlantic Region (Table 1) encompassing 5,652 hectares of habitat. As a result of previous reviews, seven former MBS's have been de-listed (Table 2) as having little value to the resource. This review examines each of the present sites and provides a reference list for each site. Each sanctuary is discussed using the following headings: Location, Area, Land Ownership, Major Habitat Types, Description of Area, Public Use, Importance to the Resource, Species at Risk, Historical and Present Land Use Conflicts, First Nations, Protective Status and Enforcement, Selection Criteria Met, Recommendations and References.

The selection criteria used for establishing, maintaining or delisting Migratory Bird Sanctuaries follows. The same criteria were used in this review process to evaluate each sanctuary. However, previous reviews have shown that the criteria alone cannot always be used in the decision to retain or de-list a sanctuary. Previous reviews have recommended de-listing some sanctuaries because they no longer meet the criteria. In some cases, public pressure, and the

perceived value of the sanctuary has extended the life of some of these areas well after the need for protection under the sanctuary regulations has passed. The boom in ecotourism has also put pressure on retaining sanctuaries that probably should be de-listed. Figure 1 describes where current sanctuaries are located in the Atlantic Provinces.

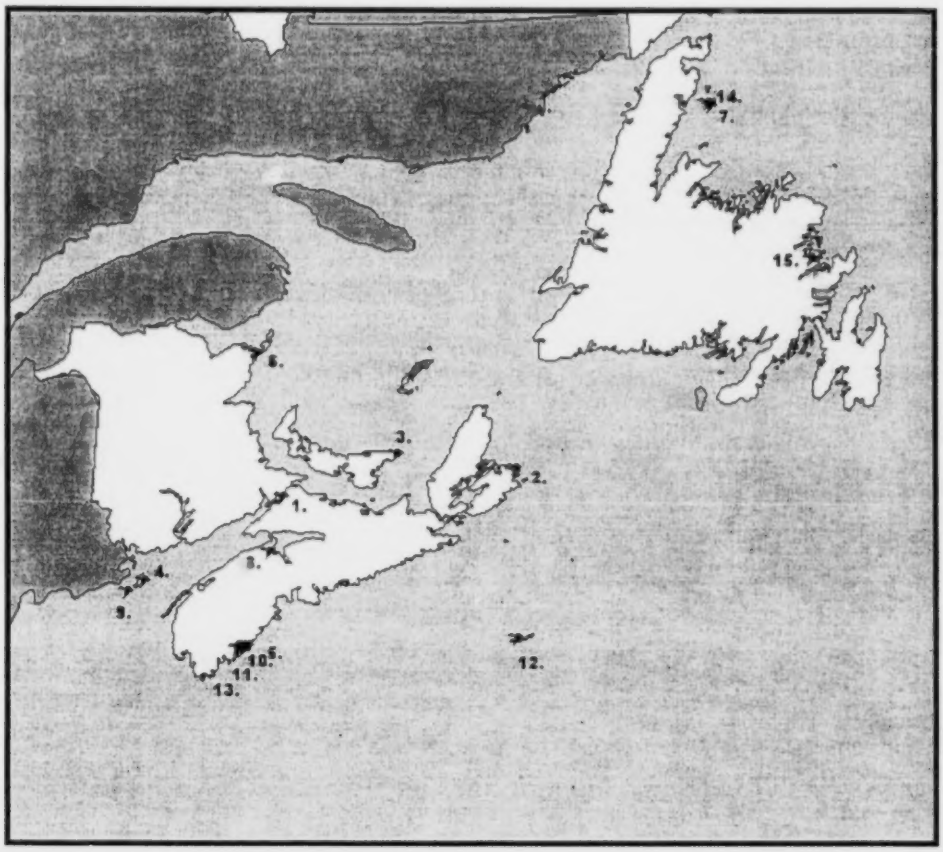

Figure 1. Map of Migratory Bird Sanctuaries in Atlantic Region

1. Amherst Point Migratory Bird Sanctuary
2. Big Glace Bay Lake Migratory Bird Sanctuary
3. Black Pond Migratory Sanctuary
4. Grand Manan Migratory Bird Sanctuary
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14. Shepherd Island Migratory Bird Sanctuary
15. Terra Nova Migratory Bird Sanctuary

As mentioned above, there has been no interest in the sanctuaries to date from Aboriginal communities but this still should be considered when reviewing current sanctuaries and when potential new sites are discussed.

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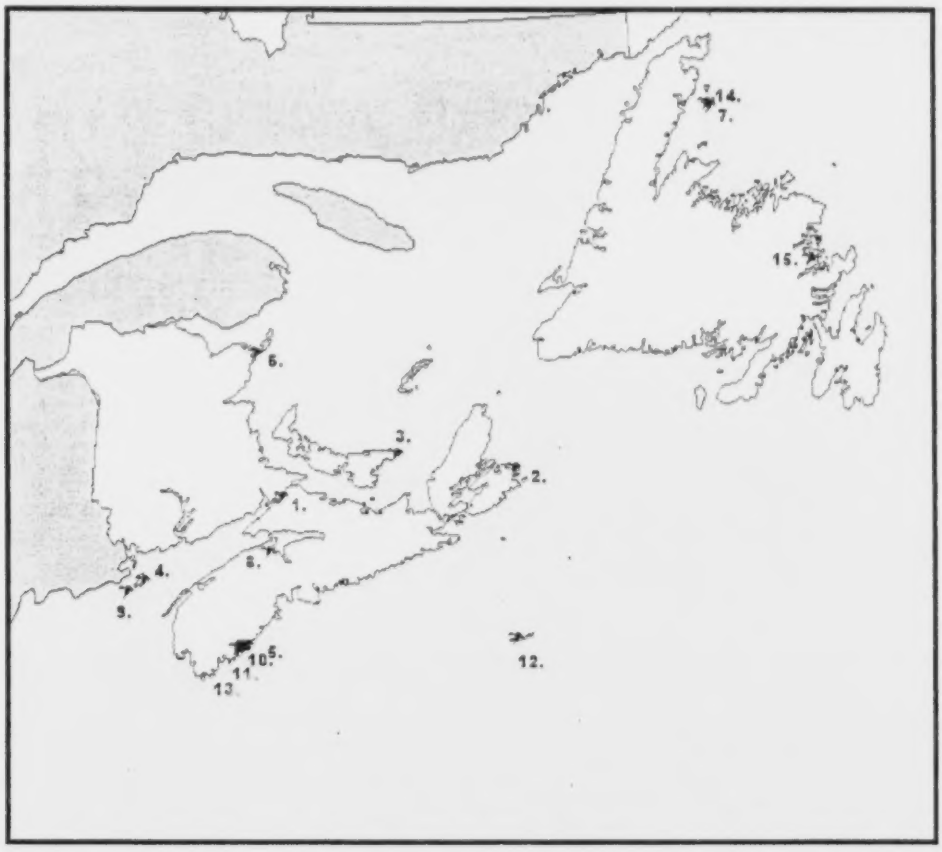

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The basic criteria for the establishment of a MBS are as follows:

1. It supports populations, which are concentrated, for any part of the year, in order to meet one of several essential needs, which are vulnerable to site specific threats.

2. It supports populations that occupy habitats of restricted geographical area and are vulnerable to human disturbance.

3. It regularly supports at least 1% of one species or subspecies.

4. The site figures prominently in the requirement for the management of regional populations of migratory birds and/or has high capabilities for educational or interpretative purposes.

In this review, information on migratory bird use of each sanctuary will be weighed against each criterion, as noted above (1 to 4), to determine which are met or not met. In some cases, there may be insufficient data to make a proper evaluation and this will noted in the review. Table 1 Summarizes whether each sanctuary meets selection criteria based on currently available information.

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Table 1. Summary of Current Sanctuaries Meeting Selection Criteria

Migratory Bird Sanctuary	Criteria Met (yes/no)				Presence of Listed Endangered Species*		Other Rare Species	Recommendation (Retain or De-list)
	1.	2.	3.	4.	Federal	Provincial		
1. Amherst Point	yes	yes	yes	yes	T,SC	no	-	retain
2. Big Glace Bay Lake	yes	yes	no	yes	SC,E	E,SC	-	retain, need more information
3. Black Pond	yes	yes	no	yes	E (past)	no	-	retain, need more information
4. Grand Manan	no	yes	no	yes	no	no	-	retain, need more information
5. Haley Lake	yes	yes	yes	yes	no	no	-	retain
6. Inkerman	yes	yes	yes	yes	no	no	-	retain
7. Isle aux Canes (Green Island)	yes	yes	yes	yes	no	no	-	retain
8. Kentville	no	no	no	yes/ no	no	no	-	de-list
9. Machias Seal Island	yes	yes	yes	yes	E	E	-	retain
10. Port Hebert	yes	yes	yes	yes	no	no	-	retain
11. Port Joli	yes	yes	yes	yes	no	no	R(plant)	retain
12. Sable Island	yes	yes	yes	yes	E	E	R(plant)	retain
13. Sable River	yes	yes	yes	yes	no	no	R(plant)	retain
14. Shepherd Island	yes	yes	yes	yes	no	no	-	retain
15. Terra Nova	yes	yes	no	yes	SC	no	-	retain

* E= Endangered, T= Threatened, SC= Special Concern

Table 2. Present Sanctuaries in the Atlantic Provinces

Name and Location	Year Est.	Size (ha)	Species Protected
1. Amherst Point Cumberland Co., NS	1947	433	Breeding and migrant waterfowl and marshbirds
2. Black Pond , Kings Co., PEI	1936	130	Breeding and migrant ducks.
3. Big Glace Bay Lake Cape Breton Co., NS.	1939	240	Migrant waterfowl, breeding Piping Plover and possibly nesting terns
4. Grand Manan Charlotte Co., NB	1931	250	Migrant waterfowl
5. Haley Lake Shelburne Co., NS	1980	100	Staging wintering Canada Goose and Black Duck
6. Inkerman, Gloucester Co., NB	1998	15	Breeding Black-crown Night Heron and Great Blue Heron
7. Isle aux Canes (Green Island) Strait of Belle Isle, NL	1991	150	Breeding Common Eider
8. Kentville Kings Co., NS	1939	200	Breeding and migrant waterfowl
9. Machias Seal Island Charlotte Co., NB	1944	10	Breeding Atlantic Puffin, Common & Arctic Tern, Razorbill, Leach's Storm Petrel and Common Eider
10. Port Hebert Queens Co., NS	1941	350	Staging and wintering Canada Goose and Black Duck
11. Port Joli Queens Co., NS	1941	280	Staging and wintering Canada Goose and Black Duck
12. Sable Island Halifax Co., NS	1977	2350	Breeding, migrant and wintering habitat for songbirds, shorebirds, seabirds, waterfowl
13. Sable River Shelburne Co., NS	1941	260	Staging and wintering Canada Goose and Black Duck
14. Shepherd Island Strait of Belle Isle, NL	1991	13.5	Breeding Common Eider
15. Terra Nova Bonavista Bay, NL	1967	870	Migrant waterfowl, shore-birds and seabirds adjacent to Terra Nova, National Park
TOTAL (15)		**5651.5**	

Table 3. Former Sanctuaries in the Atlantic Provinces

Name and Location	Year Est.	Reason Est.	Year De-listed	Reason De-listed
1. Aero Lake Westmorland Co. N.B.	1933	Protect nesting waterfowl	1980	No value as the marsh was drained
2. Bathurst Basin Gloucester Co. N.B.	1935	Protect migrant waterfowl	1972	Entire sanctuary is now within City Limits
3. Caton' s Island Kings Co., NS	1934	Protect shorebirds	1972	Of little value to migratory birds
4. Kan-Wo Country Club Kings Co., NS	1943	Protect song birds	1963	Golf Club grounds of little value to birds
5. Moore' s Kings Co., PEI	1956	Protect waterfowl	1975	Transferred to Provincial control as a Wildlife Management Area.
6. Quoddy Charlotte Co. NB	1936	No reason given	1972	No valid reason to retain site as Sanctuary
7. St. Peters' Bay Labrador, Nfld.	1949	Protect eiders	1980	The Sanctuary proved to be of little value

Amherst Point Migratory Bird Sanctuary

Location

Cumberland County, Nova Scotia, 5 km south-west of the town of Amherst.
Latitude: 45°48'N Longitude: 64°16'W
National Topographic Series: 1:50 000 21H/16 (Amherst)

Area 433 hectares

Land Ownership

Federal Government (CWS) ..... 413 ha
(Including Chignecto National Wildlife Area)

Domtar Construction Materials Ltd..... 20 ha

Major Habitat Types

Cattail Marsh and Bog..... 27%
Controlled Water-level Impoundments 27%
Open Water (Lakes) 6%
Mixed Forest (mainly spruce) 27%
Open Upland Fields..... 27%

Description of Area

While small in size the Amherst Point Migratory Bird Sanctuary (APMBS) has a striking variety of habitat types. The sanctuary is a virtual mosaic of lakes, ponds, freshwater marshes, fields and forests. Early settlers cleared the uplands for farms, drained the marshes for hay land and cut the forests for timber. The effects of man's activities are apparent, but past geological events are responsible for the more unusual features. The most interesting are the many conical depressions called "sinkholes" that occur throughout APMBS; the entire area is underlain by gypsum and "karst" topography has developed. Outcrops of gypsum were mined in the vicinity up to the mid 1950's.

Much of the reclaimed marshland was farmed up to the1940's and subsequently abandoned. Shortly after CWS acquired the lands in 1973-74, Ducks Unlimited under an agreement with CWS constructed dykes and water control structures to re-flood these drained wetlands. Thus, four shallowly flooded controlled-water-level impoundments occur on these lands. No farming of lands has taken place since the sanctuary became established.

Several other types of wetlands occur on the site, including extensive areas of cattail marsh and bogs. Two shallow lakes (Layton's and "The Cove") provide a large area of open water. Layton's Lake is particularly unique in that it exhibits a chemocline that sees the top half of its depth fresh water and the bottom half is salt water (Howell and Kerekes, 1982). All the wetlands are highly fertile, rich in minerals supplied by either the gypsum- limestone bedrock or marine silt

deposits. Cattail (*Typha* sp.), and burreed (*Sparganium* sp.) commonly border the impoundments. Water milfoil (*Myriophyllum* sp.) and pondweeds (*Potamogeton* sp.) are common submergents in the deeper waters.

The dominant tree cover includes white and red spruce (*Picea glauca*, *Picea rubens*), balsam fir (*Abies balsamea*), red and jack pines (*Pinus resinosa*, *Pinus banksiana*), larch (*Larix laricina*), birch *(Betula papyrifera*), and alder (*Alnus* sp.). A small stand of eastern hemlock (*Tsuga canadensis*) is located near the main entrance and a large number of other trees and shrubs both native and ornamental occur. One known invasive species in the sanctuary is the buckthorn (*Rhamnus Frangula L.)* which although common, does not appear to be spreading.

Public Use

For many years the APMBS has provided people with an opportunity to enjoy the outdoors. Most people visit the Sanctuary to observe and photograph the birds; however, others visit there simply to walk and relax in its pleasant surroundings. Many within the nearby community view APMBS as a community park. The sanctuary is particularly busy during fall when often on weekends the parking lot is filled with vehicles. In the winter the trails are used for snowshoeing and cross-country skiing and the ponds and lakes for skating. The sanctuary also provides an ideal location for nature study, and many school classes, cub and brownie packs, an orienteering club and other groups take advantage of it.

Some fishing is done in Layton's Lake, and muskrat.trapping is carried on annually, especially in the shallow impoundments.

Importance to the Resource

The wetlands at APMBS are among the most productive in the Province of Nova Scotia and a wide variety of aquatic avifauna uses the site during spring, summer and fall. Common nesting species include the American Black Duck (*Anas rubripes*), Northern Pintail (*Anas acuta*), American Green-winged Teal (*Anas crecca*), Blue- winged Teal (*Anas discors*), American Wigeon (*Anas americana*), Ring-necked Duck (*Aythya collaris)*, Pied-billed Grebe (*Podilymbus podiceps*), American Bittern (*Botawrus lentiginosus*), American Coot (*Fulica americana*), and Sora (*Porzana carolina*). Also nesting with some degree of regularity are several species that are regionally rare and are not known to nest elsewhere in Nova Scotia. Those include Gadwall (*Anas strepera*), Redhead (*Aythya americana*), Ruddy Duck (*Oxyura jamaicensis*), Virginia Rail (*Rallus limicola*), Black Tern (*Chlidonias niger*). Stray European waterfowl have occasionally been recorded at the sanctuary.

The APMBS also provides habitat for a variety of hawks, owls, shorebirds and songbirds. In fact, over 200 species of birds have been recorded for the area. Given the number and variety of birds found, the site has been a part of the NB/NS Border region waterfowl banding program for many years.

Species at Risk

Erskine (1992) reported Least Bittern (*Ixobrychus exilis*) (Threatened) and Yellow Rail (*Coturnicops noveboracensis*) (Special Concern) to occur within Amherst Point. No other

species at risk are known to occur within the sanctuary but four species of dragonfly that are unlisted but have a Atlantic Conservation Data Centre (AC CDC) ranking of S1 and S2 have been noted (see appendix 1).

Historical and Present Land Use Conflicts

Historically man has significantly altered the landscape of the upland and wetland of Amherst Point. However, the last homestead within the APMBS burned in 1929, and the upland fields have not been actively farmed since the 1950's and the marshlands since the 1940's. In support of a long term banding program for passerines, some of the fields are periodically cut to maintain this habitat in early succession.

Upon receipt of petitions signed by 33 landowners in the Amherst Point area in 1947, the Federal Government acted to establish the site as a Migratory Bird Sanctuary (PC# 3966, October 1, 1947).

Around 1955 the Nova Scotia Department of Lands and Forests purchased 85 ha within the sanctuary to prevent development, and during 1972-75 CWS purchased an additional 213 ha thus ensuring that all "developable" areas of the sanctuary were protected. Domtar Construction Materials Ltd. own 20 ha within the sanctuary. In 1971 the CWS obtained administration and control of the 85 ha of Provincial Crown Land.

In 1980 the description of the APMBS was amended to include only those lands under the control of CWS along with the 20 ha section of Domtar marshlands. That amendment (12 September 1980) reduced the area of the Sanctuary from 607 ha to 433 ha and removed most private lands from within the sanctuary.

Growth of the town of Amherst westward has greatly increased the number of homes adjacent to the sanctuary, thus increasing the level of disturbance particularly by outdoor enthusiasts using mountain bikes, horse back riding, snowmobiles and all terrain vehicles, all of which are prohibited.

During 1955-60 the Nova Scotia Power Corporation (NSPC) constructed lines through the sanctuary. The original proposal to route the lines NW of Layton's Lake and pass between the two main ponds was fortunately changed at the request of CWS and the lines were installed east of the lake and across the marsh. Maintenance of those lines by the Power Corporation had caused terrain damage within the sanctuary and in 1983 the NSPC constructed a service road along their right-of-way (ROW) that filled in some small ponds and wetlands. However, all maintenance vehicles are now kept within the ROW. Additionally, maintenance of the towers within the marsh has required the draining of the largest impoundment on two occasions.

First Nations

The closest First Nation Reserves to the sanctuary would be at either Fort Folly (27 km) or Franklin Manor No.22 (31 km).

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations PC# 1980-2435, 12 September 1980 National Wildlife Area Regulations (413 ha) PC# 1982-2854, 22 September 1982

Since the Amherst Point Migratory Bird Sanctuary is a section of the Chignecto National Wildlife Area it was decided to schedule the lands (except the 20 ha of Domtar) under the NWA Regulations in order to provide additional habitat protection. Sanctuary status and signage has been maintained to avoid any confusion amongst the hunting public as the John Lusby NWA, which is open to hunting, is less than 1km NW of the APMBS.

Selection Criteria Met

1. Criteria met. Waterfowl regularly nest, and congregate in the fall. It provides a safe area for waterfowl to go to for resting and feeding during fall hunting seasons. Sanctuary provides a secure nesting area free from major threats, which could affect nesting species. Other species, such as passerines, are also concentrated during the fall months as they prepare to migrate. Amherst Point MBS (Chignecto National Wildlife Area) is designated as a RAMSAR Site: A Wetland of International Importance.

2. Criteria met. The majority of the wetland species, using area, require specific habitats for nesting, feeding and resting, which the site provides. The site provides a safe area free from high human disturbance levels.

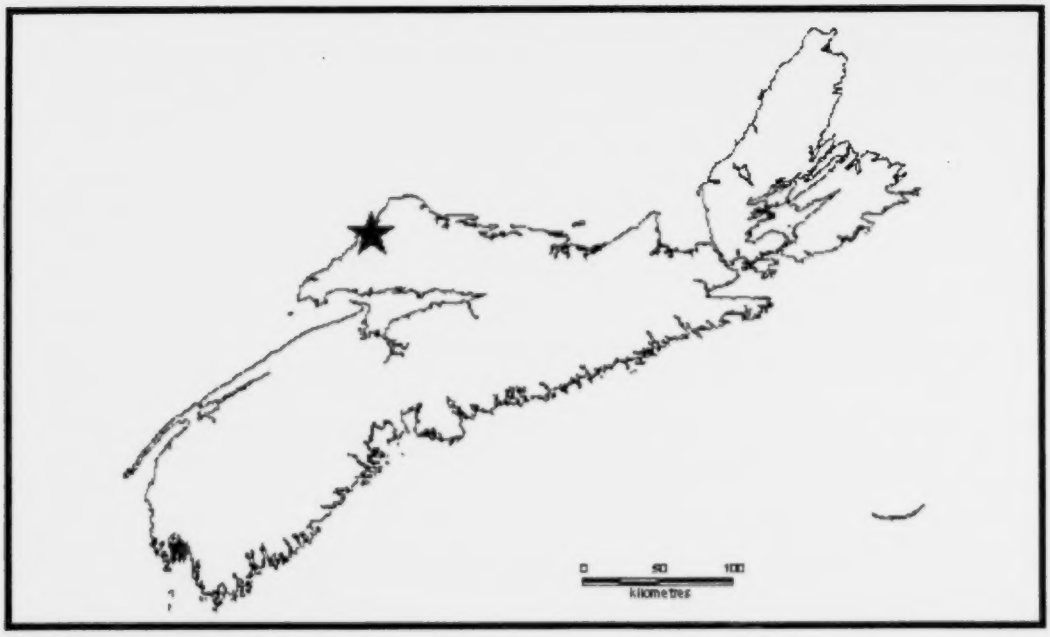
3. Criteria met (e.g. Black Tern, Pied-billed Grebe).

4. Criteria met. Along with other sites in area, forms a core of marshland habitats that provide requirements needed to manage waterfowl populations effectively. This site regularly contributes to the education of the public in the human and natural history of the area (as seen through the number of community groups and others that regularly make use of the opportunities afforded by this site).

Recommendations

1. Annually maintain the trails, signage and visitor use facilities, upgrading where necessary.

2. Increase enforcement patrols and maintain communication with the local detachment of the RCMP to attempt to curb the minor infractions of the MBS Regulations and NWA Regulations.



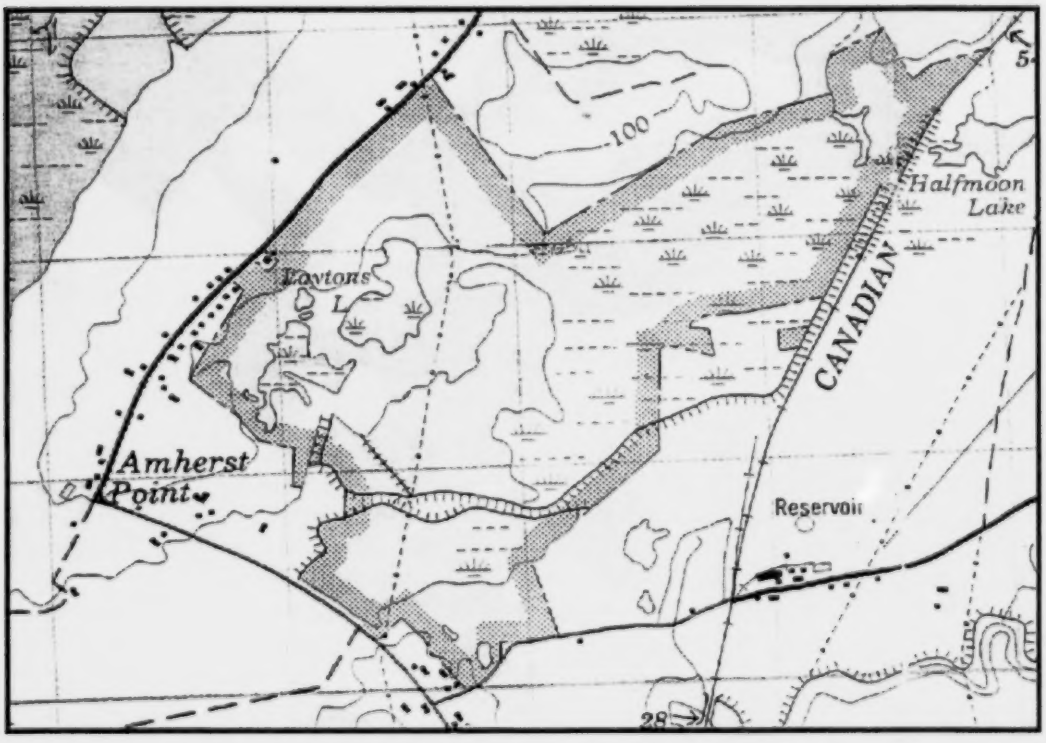


Figure 2. Amherst Point Migratory Bird Sanctuary Locator Map

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Big Glace Bay Lake Migratory Bird Sanctuary

Location

Cape Breton County, Nova Scotia, on the eastern boundary of the town of Glace Bay on Cape Breton Island. Includes land to the mean high water mark and all shoals, sandbars, sand dunes, rock or islands.
Latitude: 46°10'N Longitude: 59°56'W
National Topographic Series: 1:50 000 11 J/04 (Glace Bay)

Area

240 hectares

Land Ownership

Canada Lands (Atomic Energy of Canada Ltd.) - 23% (all the upland along the eastern boundary).
Provincial Crown-10% (beach and salt marsh)
Un-deeded 67%-shallow inter-tidal waters and flats

Major Habitat Types

Gravel beach 5%
Mixed woodland.....23%
Salt marsh 5%
Shallow coastal water and eelgrass flats 67%

Description of Area

Big Glace Bay "Lake" is a coastal barrier beach pond connected to the open Atlantic Ocean, and thus subject to daily tidal fluctuations of two to three metres. The 240 ha site is protected from the open sea by a 1.5 km sand and gravel beach backed by salt marsh and inter-tidal flats. The shallow brackish-saline water supports beds of eelgrass (*Zostera marina*) and thus is attractive to migrating waterfowl. The upland on the east side of the "Lake" is vegetated principally with mixed woods of spruce, fir and American beech (*Fagus grandifolia*) whereas the surrounding upland on the western side used to support a Heavy Water Plant (now decommissioned). Commercial aquaculture was tried at the site after the dismantling of the heavy water plant but did not remain in operation.

Public Use

Big Glace Bay Lake is the only migratory bird sanctuary on Cape Breton Island and in the past has been actively endorsed by The Cape Breton Wildlife Association and the Cape Breton chapter of the Nova Scotia Bird Society. The sanctuary is actively used for nature observation during spring, summer and fall. The long gravel beach has an access road from the eastern side of the sanctuary, and recreational vehicle traffic is quite intensive during summer, as the area is used for swimming and picnicking.

Importance to the Resource

Murrant (2003) has recorded over 90 bird species within the MBS. Twenty-one species of waterfowl and twenty-three species of shorebird have been observed. There have also been a number of less common species observed (see Murrant, 2003). So while the sanctuary may not be of critical importance to any one species of migratory bird, it does provide safe migration habitat for 100-200 Black Duck and up to several hundred Canada Goose (*Branta canadensis*). During winter, part of the sanctuary usually stays open and supports a few dozen Black Duck along with 40 to 60 Common Goldeneye (*Bucephala clangula*) and a number of Bufflehead (*Bucephala albeola*). Canada geese have also made use of the area in the late winter.

Up to two pairs of the endangered Piping Plover (*Charadrius melodus*) have nested in the past on the Glace Bay barrier beach and several pair of Common Tern (*Sterna hirundo*) have been known to nest on hummocks in the salt marsh. A small number of Willet (*Catoptrophorus semipalmatus*) nest along the edge of the marshes.

Species at Risk

As noted above, Piping Plover have nested here in the past but have not been recorded here since 1994. Short-eared Owl (*Asio flammeus*) a species of special concern has also been known to frequent the area. Harlequin Duck (*Histrionicus histrionicus*) (Special Concern) have been recorded in the waters adjacent to the sanctuary. Common Tern and Nelson's Sharp-tailed Sparrow (*Ammodramus nelsoni*), are of general interest wherever they occur and have been found at this site at various times (see Appendix 1).

Historical and Present Land Use Conflicts

The indiscriminate use of firearms in a populated area, along with its importance as migration habitat for waterfowl, prompted the local Fish and Game Association to lobby for the establishment of the Migratory Bird Sanctuary in the fall of 1933, and a petition was secured from 19 of the 20 land owners. Unfortunately one landowner steadfastly refused to sign the petition, and despite resolutions from the Fish and Game Association and Town Council in Glace Bay the Sanctuary was not established until May 22, 1939 (Pc#1186). The sanctuary description was amended on 12 September 1980 and reduced in size, eliminating a small section on the Southeast side of the area.

During the mid-1950's Dominion Utilities constructed a Sanctuary and during the early 1960's Deuterium of Canada constructed a large Heavy Water Plant along the Southwest side of the sanctuary. Deuterium of Canada (now under Atomic Energy of Canada Limited, AECL) subsequently purchased all the upland along the eastern side of the Lake. That upland has remained undeveloped; however, in 1980 AECL upgraded the road to the beach, which increased the level of traffic through this area of the sanctuary. The land held by AECL may be put up for sale to private interests.

First Nations

There are no First Nation Reserves in the immediate area. Reserves in the area nearest to Big Glace Bay Lake would be at Sydney No.28A (18 km), Membertou No.28B (21 km), Caribou

Marsh No.29 (26 km) or Eskasoni No.3 (58 km).

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations (PC# 1980-2435, 12 September 1980.)

Signage has been maintained through biennial visits to the area by habitat staff from Sackville and the Royal Canadian Mounted Police (RCMP) detachment in Glace Bay regularly patrol the site.

Selection Criteria Met

1. Criteria met.

2. Criteria met. High diversity of migrant birds in spring and fall (area importance is in the diversity of birds not necessarily the numbers)

3. Criteria not met (but area does sporadically support Piping Plover).

4. Criteria met. Given that it is the only sanctuary in Cape Breton. Along with other protected area it forms a network of areas that provide secure habitat for numerous species. Being adjacent to the Town of Glace Bay, it is frequently visited by the public and provides some educational value.

Recommendations

1. While this sanctuary is generally only of provincial importance it should be maintained to provide some measure of protection for staging waterfowl.

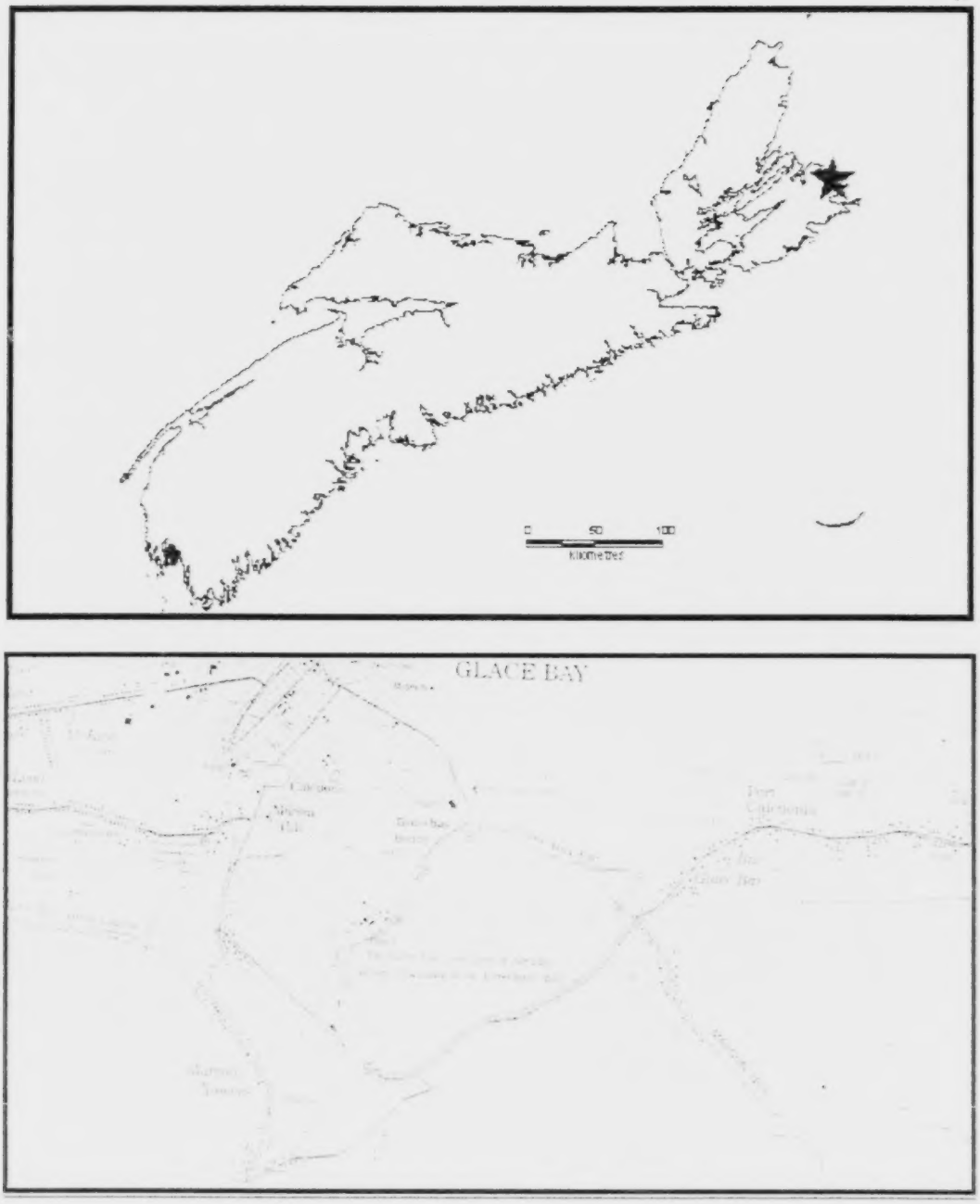

Figure 3. Big Glace Bay Lake Migratory Bird Sanctuary Locator Map

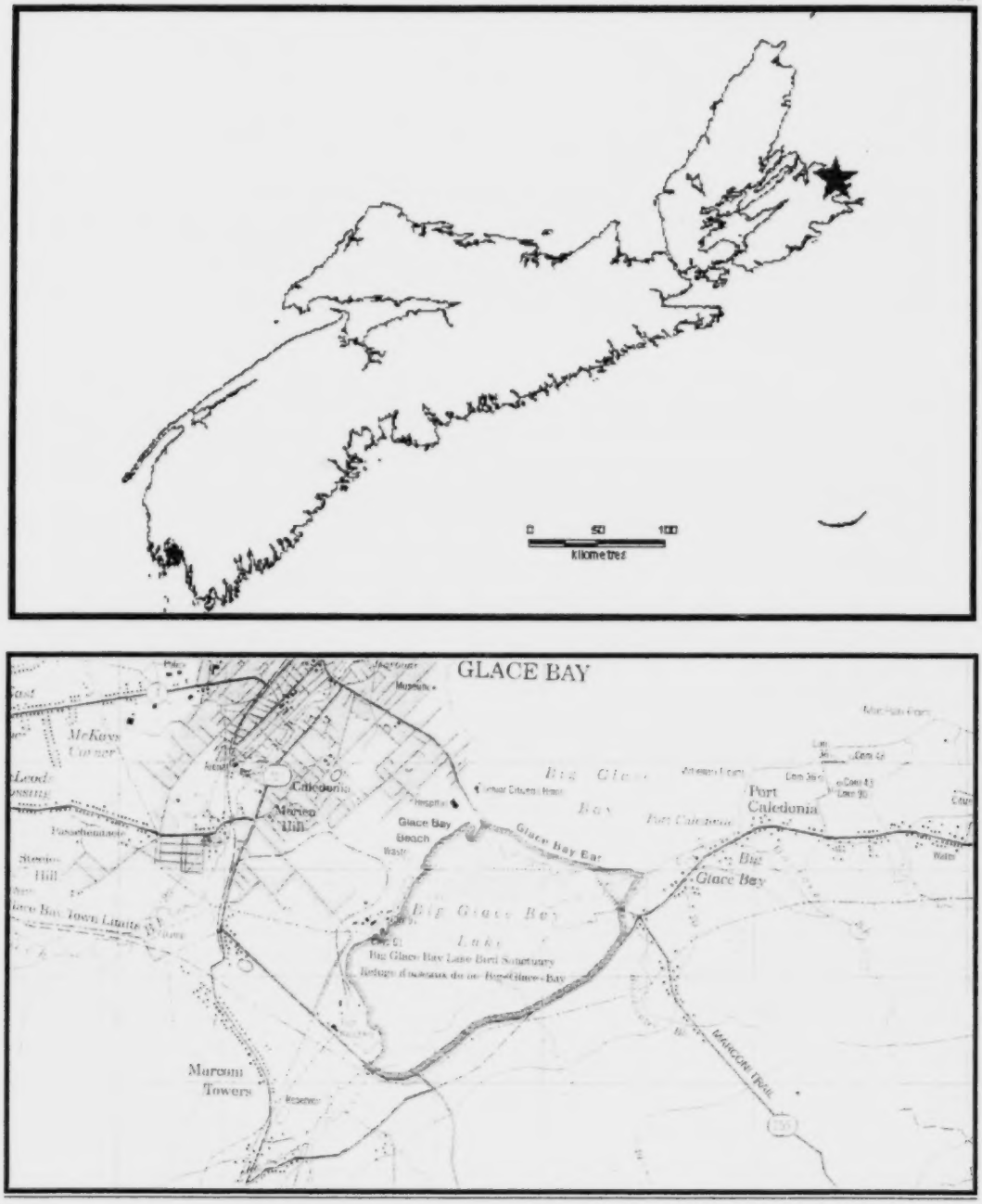

Figure 3. Big Glace Bay Lake Migratory Bird Sanctuary Locator Map

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Black Pond Migratory Bird Sanctuary

Location

Kings County, Prince Edward Island, situated along highway #16, 5 km east of the town of Souris.
Latitude: 46°23'N Longitude: 62°10'W
National Topographic Series: 1:50 000 11L/8 (Souris)

Area 130 hectares

Land Ownership

Undeeded ..... 20% - (open water)
Provincial Crown Land 36%
Private ..... 44% - (six owners)

Major Habitat Types

Sand Dunes 31%
Beach 5%
Open Water and Marsh 20%
Spruce Forest 29%
Open Fields 14%
Residential 1%

Description of Area

Black Pond is an exceptional example of a typical barrier beach pond ecosystem. A 1 km sand beach backed by an extensive dune complex separates the 50 ha pond from the sea. The fore dunes are stabilised by beach grass (*Ammophila breviligulata*) while the back dunes are covered with lichen, crowberry (*Empetrum nigrum*) and false heather (*Hudsonia tomentosa*). Black Pond itself is a shallow freshwater lake filled with dense beds of pondweeds (*Potamogeton sp.*) and bordered with spike rush (*Eleocharis sp.*) and scattered stands of cattail (*Typha Sp.*) and bulrush (*Scirpus validus*).

The surrounding countryside is rolling lowland with small woodlots and agricultural fields.

Public Use

Public use of the area is relatively intensive. In the spring and early summer fishermen use Black Pond for trout fishing and throughout the summer the extensive dunes and beach area attract tourists and residents for bathing, picnics, beach parties and leisure walks. (A campground under the name of "Loch Dhu" was opened next to the sanctuary in the 1970's but the site is not presently active.). There is a road on the southern boundary that provides access to the area for users of the beach.

Bird watchers frequent the area and tourists stop along highway #16 to enjoy the scenic view across Black Pond and the dunes.

Importance to the Resource

The complex provides one of the more important waterfowl production and migration habitats in eastern Prince Edward Island. Nesting waterfowl species include Black Duck, Green-winged Teal, Blue-winged Teal and Ring-necked Duck.

During migration the sanctuary is a major waterfowl concentration area, with flocks of ducks numbering at any one time from several hundred to about one thousand individuals. Large flocks of Blue-winged Teal and lesser numbers of Northern Pintail and American Wigeon use the Sanctuary in September but generally migrate by early October. Flocks of Green-winged Teal and Ring-necked Duck stay well into November, while flocks of Black Duck numbering from 400 - 600 stay until Black Pond freezes over in mid-December. Small flocks of Canada geese and Brant are commonly observed in the Sanctuary during spring migration.

During late fall and winter an area of open water along the main inlet of Black Pond is frequented by a small number of Common Goldeneye, Bufflehead and Common Merganser (*Mergus merganser*).

The Island Nature Trust has been acquiring land in the area to aid in habitat protection.

Species at Risk

Piping Plover have been recorded using the dune area of this sanctuary in the past.

Historical and Present Land Use Conflicts

Until recently, man's use of the area surrounding Black Pond was largely agricultural. The upland soils around the pond are sandy loams with low fertility, poor moisture-holding capacity and a high susceptibility to erosion. Consequently many fields formerly used for crops are now abandoned by agriculture. A large field adjacent to the north rim of Black Pond is now used for excavating earth fill used in highway construction. That activity along with road construction on highway #16 during 1981 contributed a large amount of silt to the pond.

Public and private development during the mid-1960's increased human activity in and about the Sanctuary. The Red Point Provincial Park was developed 1km east of Black Pond. Additionally, in 1966 the Province constructed an access road through the sanctuary to the beach allowing vehicle access directly to the beach from highway #16. Thus, with increasing numbers of people, improved access and the use of all-terrain vehicles, human disturbance has greatly increased.

Black Pond was the second federal Migratory Bird Sanctuary to be established in the Maritimes (P.C. # 1116, May 11, 1936). The original sanctuary included a large section of upland and encompassed over 400 ha. The boundary was re-described in 1980 and was reduced in size to its present 130 ha.

First Nations

There are no first nations in the immediate vicinity of the sanctuary. The closest First Nation Reserve would be approximately 128 km away at Lennox Island.

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations under the Migratory Birds Convention Act - PC # 1980-2435, 12 September 1980.

CWS had a part-time warden at the site until 1977; however, since that time the RCMP detachment in Souris has patrolled the area. There do not appear to be any major enforcement problems with the Sanctuary.

Selection Criteria Met

1. Criteria met. It is an important migration area during the fall providing a secure location for concentrations of waterfowl until winter freeze-up.

2. Criteria met. The waterfowl that use the area during migration require an area free from regular human disturbance. More data is needed to fully evaluate bird use of this area.

3. Criteria not met.

4. Criteria met (protected areas part of provincial waterfowl management plan).

Recommendations

1. Retain the Sanctuary and support the Island Nature Trust in land acquisition.

2. Continue making inspection visits every two years.

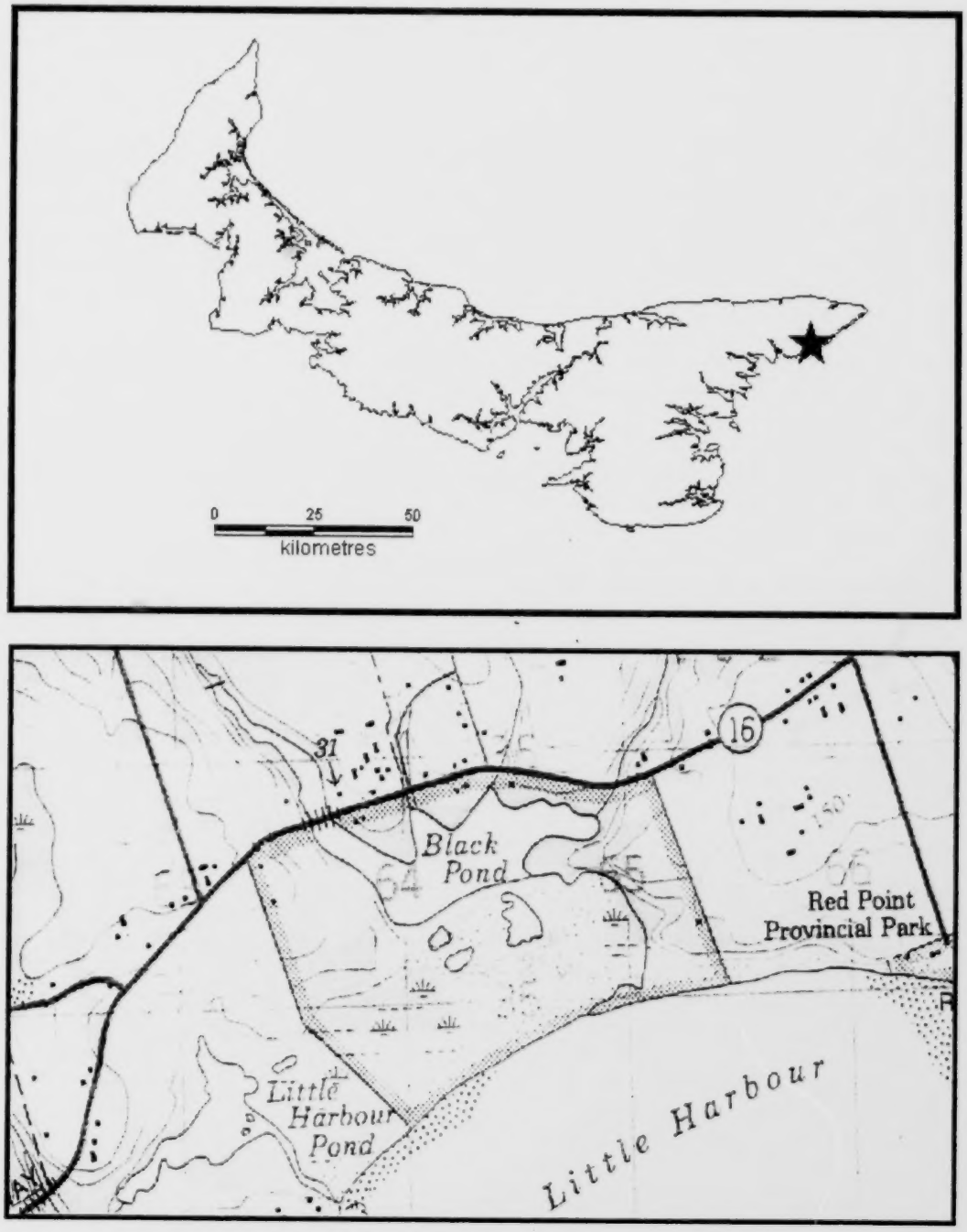

Figure 4. Black Pond Migratory Bird Sanctuary Locator Map

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Grand Manan Migratory Bird Sanctuary

Location

Charlotte County, New Brunswick, situated on the southeast coast of Grand Manan Island, between the communities of Grand Harbour and Seal Cove. The Sanctuary includes "The Anchorage" a Provincial Park and campground.
Latitude: 44° 40'N Longitude: 66° 47'W
National Topographic Series: 1:50 000 21B/10 (Grand Manan)

Area

250 hectares

Land Ownership

Private (27%) - 2 parcels
Inter-tidal (38%) -Province
Provincial Crown (35%) - Anchorage Provincial Park

Major Habitats Types

Spruce Forest..... 50%
Open water..... 16%
Bog Heath 15%
Inter-tidal Reefs and Flats 7%
Beach and Dunes..... 6%
Marsh..... 6%

Description of Area

Two large freshwater ponds (Long and Great Pond) dominate the site. These "barrier beach ponds" are separated from the sea by a wide sand-gravel beach backed by dunes which are stabilized with beach grass (*Ammophila breviliqulata*). Little aquatic growth occurs within the ponds; however, a small marshy area occurs at the outlet of Great Pond. Tidal waters do not enter the ponds and thus freshwater conditions prevail. The high tidal range (6-8 m) exposes extensive sand/gravel flats and rockweed (*Fucus* sp.) covered reefs adjacent to the beach. Surrounding the ponds to the north-west is a low shrubby bog-heath gradually merging to a low spruce forest.

The Long Pond/Great Pond complex is a good example of a coastal barrier beach pond formation and is the best example of this type of ecosystem on Grand Manan.

Public Use

During the early 1970's the Provincial Government purchased the Anchorage estate and has now developed the old Inn and grounds into a Provincial Campground and Park. Much of the western section of the sanctuary is within this park and an access road from the park and campground runs the full distance along the beach to the eastern end of the sanctuary. Thus

the beach and dune area of the sanctuary receives intensive use by picnickers and hikers during the summer along with bird watchers and other naturalists. Fishing is popular in both Long and Great Ponds during spring and early summer.

Importance to the Resource

Over 3000 records have been kept from 1991 to 2002 by Dalzell (2002) indicating waterfowl and shorebirds continue to be the primary users of the sanctuary in both the salt and fresh water habitats. Of these, Bufflehead and Sanderling (*Calidris alba*) are the more numerous waterbirds that regularly utilize the sanctuary as a migration and wintering area. According to old warden reports, during the 1950-60 's it was common to observe over 1000 Black Ducks along with smaller numbers of goldeneye's and buffleheads during late fall and through much of the winter. In recent times a few Canada Goose, Ring-necked Duck, Pintail and American Wigeon frequent the sanctuary during the fall and in spring large numbers of Common Eider (*Somateria mollissima*) and Brant (*Branta bernicla*) use the area along the beach. Occasionally broods of Black Duck, Green-winged Teal, Ring-necked Duck and Wigeon have been observed on the ponds during early summer. Black-crowned Night Heron (*Nycticorax nyticorax*) have been known to forage in the marsh at the outlet of Great Pond during summer and fall. A total of sixty-seven species have been observed regularly in the area, of which twenty-six are waterfowl species and twenty-eight are shorebird species (see Dalzell, 2002).

Species at Risk

No known species at risk use this area but many uncommon species are present in or near the sanctuary. The monarch butterfly (*Danaus plexippus*) (Special Concern) has been known to occur in the vicinity of Grand Manan MBS but not within the boundaries of the sanctuary itself. Nelson's Sharp-tailed Sparrow (*Ammodramus nelsoni*) although not at risk is known to occur in the area and is a species that is uncommon throughout its range (see Appendix 1&2).

Historical and Present Land Use Conflicts

During November 1924 federal Migratory Bird Officer Robie Tufts visited Grand Manan and met with owners of the lands around Great Pond who were "desirous of creating a Bird Sanctuary". In August 1928 a petition was received from 60 persons living in the Grand Harbour district of Grand Manan requesting that Long and Great Ponds be established as a Bird Area to provide better protection for the Black Duck. The sanctuary was established on 30 May 1931 (PC# 1291) and thus was the first federal Migratory Bird Sanctuary to be established in the Maritimes. In 1941 the sanctuary was enlarged (PC# 6017, August 8, 1941) to the west and allowed for the passage of "armed gunners" along the Anchorage and Long Pond Beach Road. The sanctuary boundary was surveyed in 1951 and the description amended slightly in 1952 (PC# 2169, 10 April 1952).

The Grand Manan Fish and Game Association, over the years, have been very active with proposals for and against various changes to the sanctuary, and there has been a great deal of controversy over amendments to the description of the boundary.

The recent development of the Anchorage from a private guesthouse to a Provincial Park and Campground has greatly opened up the site to tourism and public use has greatly increased. A

car parking area has been developed on the west-end of Long Pond beach and a small sewage lagoon constructed adjacent to Long Pond. The road along the beach has been upgraded with picnic tables and garbage cans put out along it.

First Nations

There is no First Nation Reserve on the island of Grand Manan; the closest would be either at The Brothers No.18 (89 km) on the mainland in New Brunswick or at Bear River No.6 (A) (B) (103 km) on mainland Nova Scotia.

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations under the Migratory Birds Convention Act - (PC# 2169, 10 April 1952). CWS had a part - time warden at the Grand Manan Migratory Bird Sanctuary from early 1940's until 1974. Since that time, signs have been installed on a biennial basis by CWS staff and enforcement patrols are made by CWS Enforcement Staff, New Brunswick Department of Natural Resources (NBDNR) and the RCMP.

Selection Criteria Met

1. Criteria not met. While good numbers of wintering waterfowl make use of the sanctuary and surrounding area, it is not clear from the records if this area is essential for wintering birds.

2. Criteria met.

3. Criteria not met.

4. Criteria met. It does not meet the need for management of regional populations but does have high educational value as it is adjacent to Anchorage Provincial Park.

Recommendations

1. Retain the sanctuary but continue to collect wildlife use data to determine the sanctuary's effectiveness.

2. Consider de-listing and/or other options available since it does not fully meet criteria.

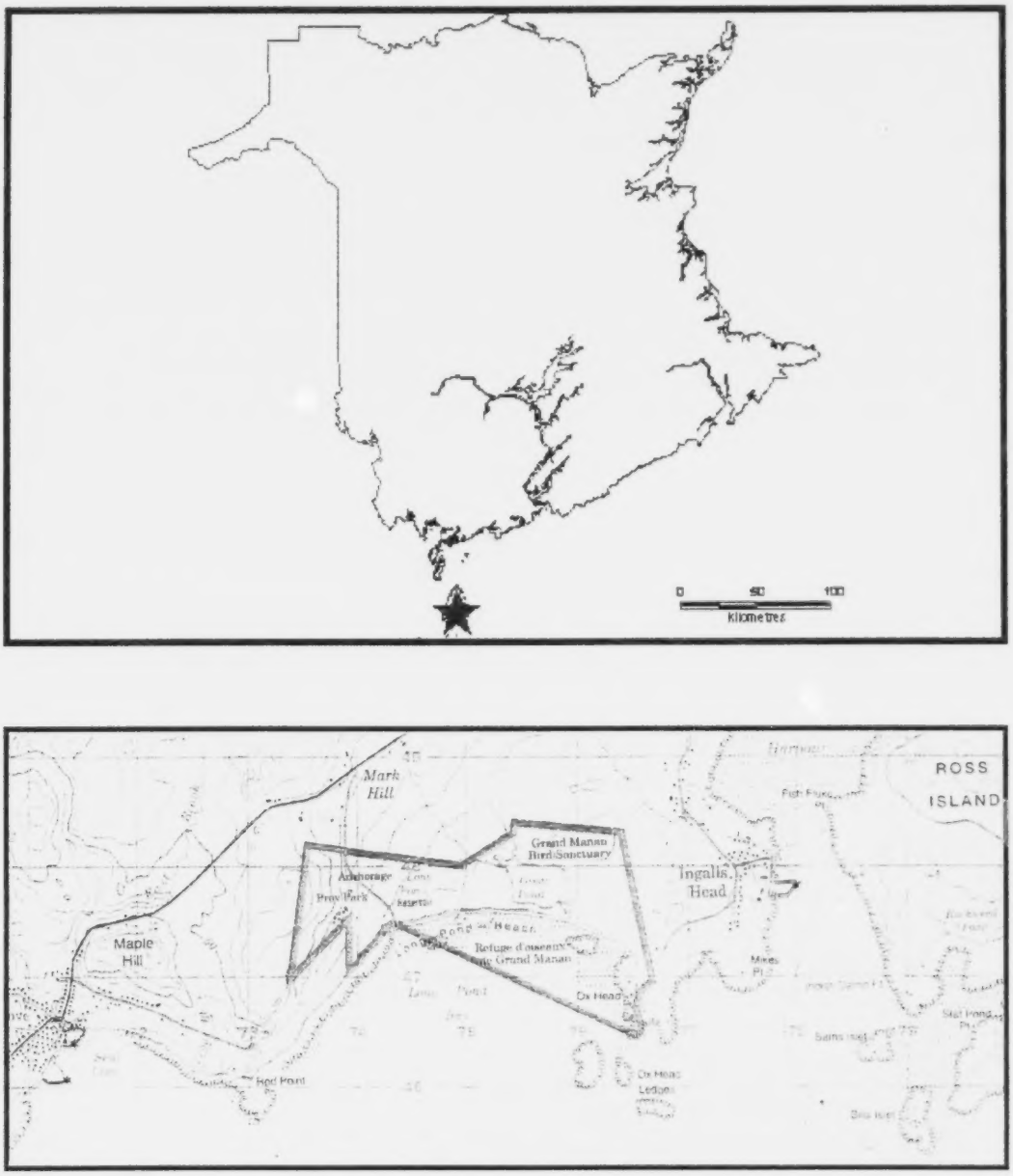

Figure 5. Grand Manan Migratory Bird Sanctuary Locator Map

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Haley Lake Migratory Bird Sanctuary

Location

Shelburne County, Nova Scotia, approximately 28 km east of the town of Shelburne and 2 km off Highway #103.
Latitude: 43°50'N Longitude: 65°00'W
National Topographic Series: 1: 50 000 20 P/15 (Port Mouton)

Area

100 hectares

Land Ownership

Un-deeded (Provincial Crown): Haley Lake Migratory Bird Sanctuary covers only the surface of the lake and what falls within the shoreline of the lake. It does not include the adjoining uplands, all of which are privately owned.

Major Habitat Types

Open Water ..... 99.5 %
Rocky Ledges ..... 0.5 %

Description of Area

Haley Lake is typical of most lakes in this southern coastal region of Nova Scotia with shallow, acidic water and rocky shoreline. Several prominent rocky islets and "ledges" surrounded by gravel deposits lie within this 100 ha lake. The lake water is nutrient poor and supports virtually no aquatic plant life. Its shores consist of large granite boulders backed by a thick growth of sweet gale (*Myrica gale*) and speckled alder (*Alnus rugosa*). To the east and west of the lake the land rises abruptly to wooded ridges dominated by hardwoods. To the north a large section of "barrens" stretches from near the lake all the way to highway #103.

Public Use

The lake does not support any kind of public use; however, several hunting camps are located on the high ground to the east of the lake where goose and rabbit hunting are popular activities.

Importance to the Resource

During the early fall, Black Duck and geese fly into Haley Lake from the surrounding salt water harbours and estuaries, the principal flight times into the lake are during rising tides when feeding sites in the harbour become inundated. Most of the time on the lake is spent preening and loafing on the rock ledges in the lake and on the granite boulders along the shore. The lake also affords the waterfowl fresh water and gravel. Haley Lake has for a number of years been one of the principal freshwater lakes in the area to be frequented by fall flights of geese and Black Duck. Records indicate that the number present at one time does not normally exceed 1,000; however, it is probable that many more occur over a period of time.

A small number of Great Blue Heron (*Ardea herodias*) nest on two of the rocky ledges within the lake. The colony has been in existence at least since 1944 and was the only known instance of ground-nesting Herons in the Maritimes with the exception of a few nesting on the cliffs of Margaree Island NWA, Cape Breton, NS.

Species at Risk

No known species at risk occur regularly within the sanctuary.

Historical and Present Land Use Conflicts

In the early 1970's sportsman in the area requested that Haley Lake be closed to waterfowl hunting. Thus, shortly after the major change in 1975 converting the closed areas in Port Joli region to management zones, Haley Lake was scheduled as a closed hunting zone under Schedule A of the Migratory Birds Regulations (September 1976). That zone was maintained until 1980 when it was converted to a Migratory Bird Sanctuary (see MacKinnon et al. 1994).

First Nations

There are no large First Nation Reserves nearby; the closest would be Ponhook Lake No.10 (37 km). The next closest ones are Wildcat No.12 at (58 km) and Medway River No.11 (50 km).

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations under the Migratory Birds Convention Act (PC # 1980-2435, 12 September 1980).

There do not appear to be any enforcement problems with this sanctuary.

Selection Criteria Met

1. Criteria met. Supports concentrated numbers of Black Duck and Canada Goose during the fall migration providing a loafing and preening area.

2. Criteria met. The site provides a resting and loafing area free from hunting pressure and other forms of human disturbance that can be found in adjacent areas

3. Criteria met (also supports a small and unique colony of Great Blue Heron).

4. Criteria met. Along with other sanctuaries in the immediate vicinity secures areas required by wintering and migrating waterfowl, principally Canada Geese, for feeding and loafing undisturbed. Haley Lake along with the other protected areas nearby provides viewing and educational opportunities for area residents and tourists.

Recommendations

1. Retain Sanctuary with the present boundaries.

2. Continue inspections of the area on a two-year rotation.

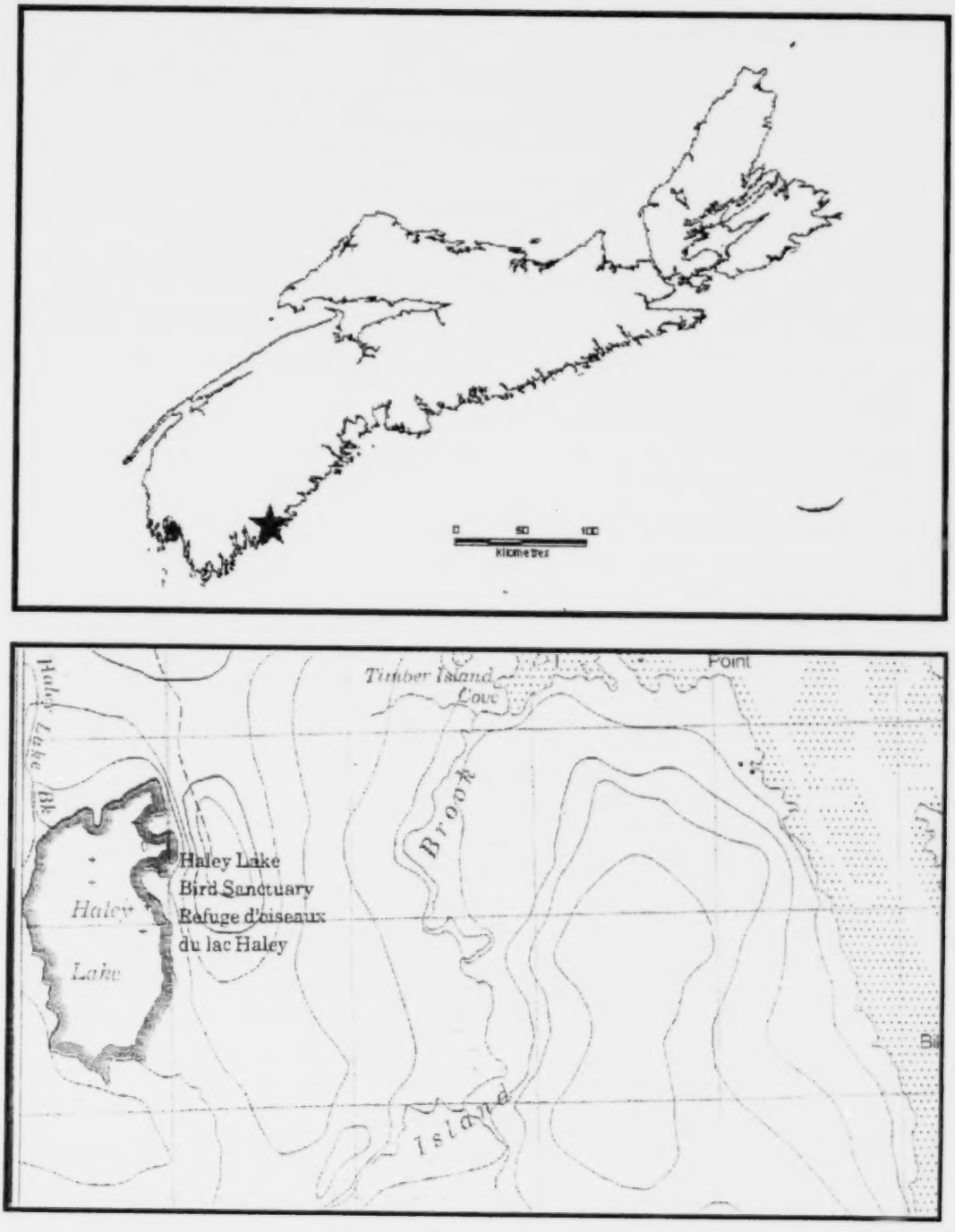

Figure 6. Haley Lake Migratory Bird Sanctuary Locator Map

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Inkerman Migratory Bird Sanctuary

Location

Pointe aux Rats Musques; two kilometres northeast of the Village of Inkerman, New Brunswick in the County of Gloucester, Parish of Inkerman.
Latitude: 47°40'N Longitude: 64°50'W
National Topographic Series: 21 P/10 (Tracadie)

Area 15 Ha

Land Ownership

Private-100% (one landowner).

Major Habitat Types

The habitat consists of a wooded swamp consisting mostly of red spruce, red maple (*Acer rubrum*), white birch (Betula papyrifera) and lesser amounts of trembling aspen (*Populus tremuloides*) with softwoods such as balsam fir (*Abies balsamea*) and white spruce intermixed. White spruce is mostly present along the edge. The under story is comprised of a dense, lush growth of red elderberry (*Sambucus pubens*) and ground cover of bunch berry (*Cornus canadesis*), wild raisin (*Viburnum cassinoides*) and sarsaparilla (*Aralia hispida*). The wetter areas are covered with coarse grass believed to be bluejoint reedgrass (*Calamagrostis sp*).

Description of Area

An isolated wooded peninsula, the actual nesting area has been changing over time as trees die and decompose from long-term usage for nesting structures. Some trees that formerly supported nests have now fallen down and are no longer available for nesting. The colony starts just inside the woods at the eastern end of an old field that is in the early stages of succession. The area occupied by the colony used to resemble a "doughnut" shape in 1993 with dead trees and an open area in the centre with nests spread out in the mixed woods surrounding this empty core. The area used in 2000 now resembles a crescent or fishhook shape with only the south-eastern end of the "doughnut" now used by nesting herons.

Public Use

Limited public use, as it is private land. There is some visitation by photographers and naturalists (with landowner approval).

Importance to the Resource

The Inkerman Black-crowned Night Heron colony (405 pair) is the largest and most significant in the Atlantic Region, and the Great Blue Heron colony (78 pair) is one of the larger ones in New Brunswick.

The following chart illustrates the history of Great Blue Heron (GTBH) and Black-crowned Night Heron (BCNH) nests within the Inkerman Migratory Bird Sanctuary.
The sanctuary is surveyed every two years.

Survey Date	BCNH	GTBH	Source
7 June 1971	present	10+	H. Chaisson
1 June 1972	?	70	H. Chaisson
21 June 1979	?	90	Al Smith
8 July 1979	?	75	H. Chaisson
1 July 1981	575-700	115	Al Smith
1987	200	50	M.N.R.S.
9 June 1993	601	81	C. MacKinnon
9 June 1998	383	50	C. MacKinnon
5 June 2000	480	41	C. MacKinnon
12 June 2002	405	78	C. MacKinnon

Species at Risk

No species at risk are known to inhabit the sanctuary.

Historical and Present Land Use Conflicts

Illegal hunting was partially the reason for establishment of the Migratory Bird Sanctuary. Cranberry farm and dredging proposals have been put forward in adjacent areas that could impact the sanctuary.

First Nations

The closest First Nation Reserve to this site is at Pokemouche No.13 (11 km); the next closest is at Tabunsintac No.9 (43 km).

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations section 12 under the Migratory Birds Convention Act.1994. SOR/DORS which came into force in 1998.

Increased enforcement presence has been successful in curbing problems in area.

Selection Criteria Met

1. Criteria met. The sanctuary supports colonial nesting species that require specific habitats and are extremely vulnerable to any threats that may affect this habitat.

2. Criteria met. The colonial nesters using the site are known to be extremely sensitive to human disturbance.

3. Criteria met (Black-crowned Night Heron 405 pair).

4. Criteria met. Given the size of the colony it is very important to the management of these populations. By definition, colonial nesters such as Great Blue Heron and Black-crowned Night Heron require disturbance free and isolated areas.

Recommendations

1. Retain sanctuary with its present boundaries.

2. Maintain the sanctuary in its present form to continue protecting heron species.

3. Continue monitoring colony and conducting nest censuses every two years.

4. Seek out ways to improve and maintain forest structure that allows the continued nesting by herons.

5. Maintain relations with land owner and area community for continued support of the sanctuary and its goals.

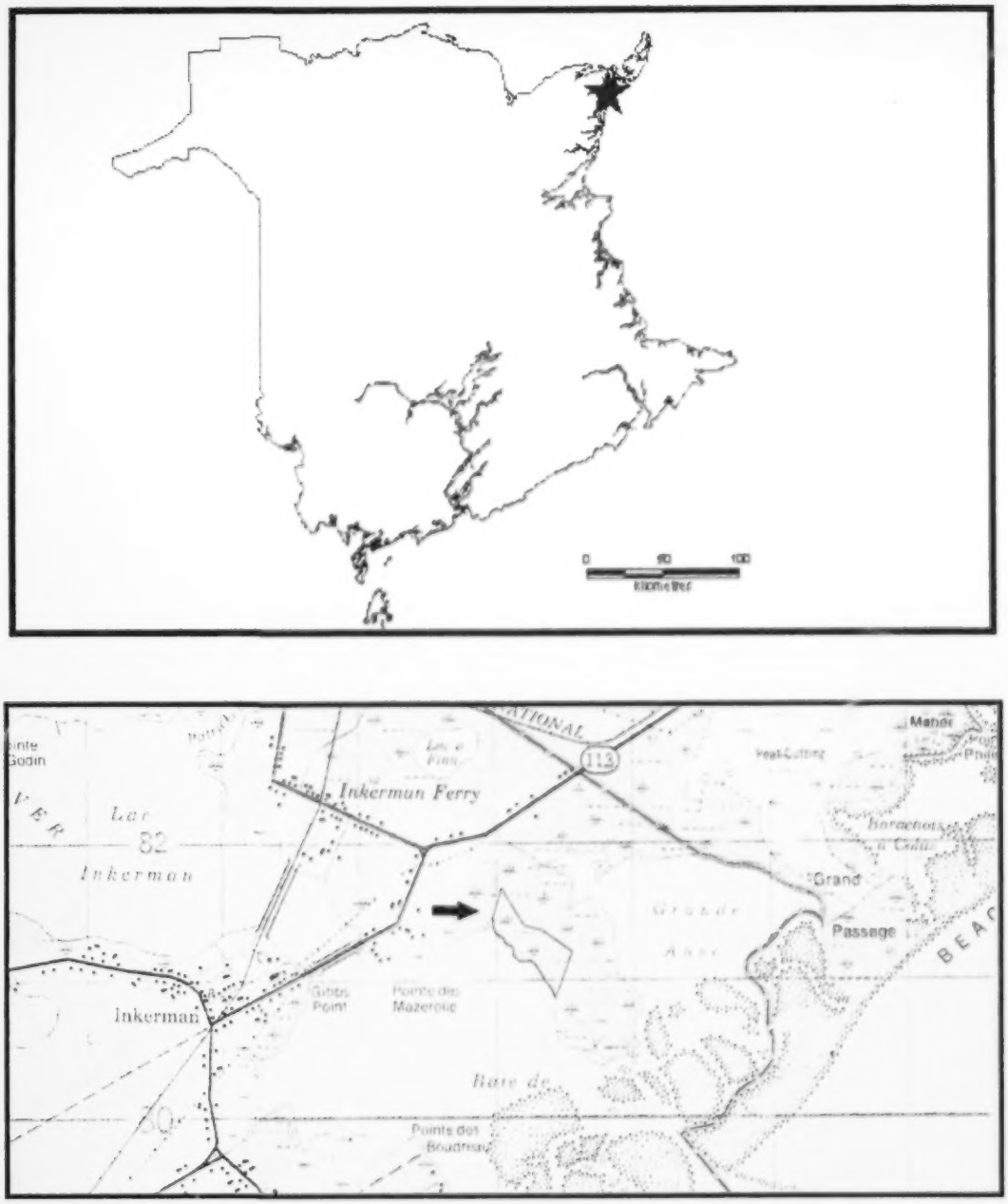

Figure 7. Inkerman Migratory Bird Sanctuary Locator Map

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Isle aux Canes (Green Island) Bird Sanctuary

Location

District of Strait of Belle Isle, designated as Île aux Canes and Black Island according to the Gazetteer of Canada for Newfoundland, Ottawa, 1983. Being also locally known as the Green Islands, and includes all water and any small islets and rocks lying within the quadrilateral defined by points having Geographical Coordinates: latitude 50°41'20" north and longitude 55°36'10" west; latitude 50°40'50" north and longitude 55°37'10" west; latitude 50°41'40" north and longitude 55°37'30" west; and latitude 50°41'55" north and longitude 55°37'10" west.
Latitude: 50°42'N Longitude: 55°37'W
National Topographic Series: 1:50 000 002L/12 (Grey Islands Harbour)

Area

150 hectares

Land Ownership

Provincial Crown.

Major Habitat Types

Marsh cordgrass (*Spartina pectinata*) and cow parsnip (*Heracleum maximum*) are the major vegetation species. The upland area supports predominately ericaceous plants, particularly crowberry (*Empetrum nigrum*) and bedrock outcrops are infrequent.

Description of Area

Except for the south-east side, the island is low lying and slopes very gradually into the sea. The low-lying portion makes up 60% of the total area and has an overburden of rich organic matter. Surrounding waters are quite shallow, with depths generally less than 5 meters and there are numerous shoals, submerged rocks and islets. The inter-tidal and sub-tidal zones constitute ideal feeding habitats for eider ducks in that they support a variety of epibenthic invertebrates including blue mussels (*Mytilus edulis*), periwinkles (*Littorina littorea*), whelks and amphipods. The latter are a particularly important food item for young birds.

Public Use

Sanctuary files suggest that there is little public usage of the island due to the difficult access and the limited time it is accessible. It would seem to be generally accepted that it is only accessible six months per year depending on ice conditions. Correspondence from sanctuary files indicates that fishermen have or intended to use the islands for fishing camps or tents.

There was a summer community located at Grey Islands Harbour situated 1 km north of Green Island. This community had a long history and was an important harbour for the cod fishery. The area has been used since the French occupied the region and it would be presumable that there was a long history of birds being used on these islands by people summering there, and from people on the boats (schooners etc.) that staged there. When Gilliland (1992) first visited

Green Island there was also evidence that the western side of the island had been used to grow crops.

Importance to the Resource

It is the only site where the number of breeding pairs of Common Eider is known to be increasing. Numbers of nests have increased from 12 in 1975 to 372 in 1986, 350 in 1988 and again to the present estimate of 1291 in 2001 (Gilliland). Together with Shepherd Island it is the largest breeding site for Common Eiders in insular Newfoundland. The gently sloping bedrock ramps allow easy access for flightless young birds and the area has an abundance of epibenthic invertebrates; blue mussels, periwinkles, whelks and amphipods. Surrounding shoals also reduce wave energy on waters where they first feed. There would appear to be a potential carrying capacity of up to 5000 nests according the Protection Plan for Green and Shepherd Islands (1988).

Species at Risk

No known species at risk use this site, although information for this site is limited. Harlequin Duck moult at other sites around the Grey Islands, but have not been seen at this particular location.

Historical and Present Land Use Conflicts

Area has been subject to eider duck poaching. There is likely a low potential for conflicts with eco-tourism. There is little information for what has traditionally or at present takes place on this island but would seem that there are some potential conflicts arising from disturbance and hunting.

First Nations

As the sanctuary is offshore, it does not have any First Nation Reserves nearby.

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations.

Selection Criteria Met

1. Criteria met. It supports a nesting colony of eiders, which normally require isolated locations.
2. Criteria met. Eiders require an undisturbed nesting area free from mammalian predators. They normally nest on offshore islands which limits their geographic distribution.
3. Criteria met. This sanctuary, when combined with Shepherd Island supports the largest colony of Common Eider in region.

4. Criteria met. Protection of the eider population on this island is essential to the management of this species in the Atlantic Region.

Recommendations

1. Status quo as it is a remote site with no immediate threats.

2. Biennial visits need to be initiated to census and monitor sanctuary as is done with other sanctuaries to collect data that can be used in its management.

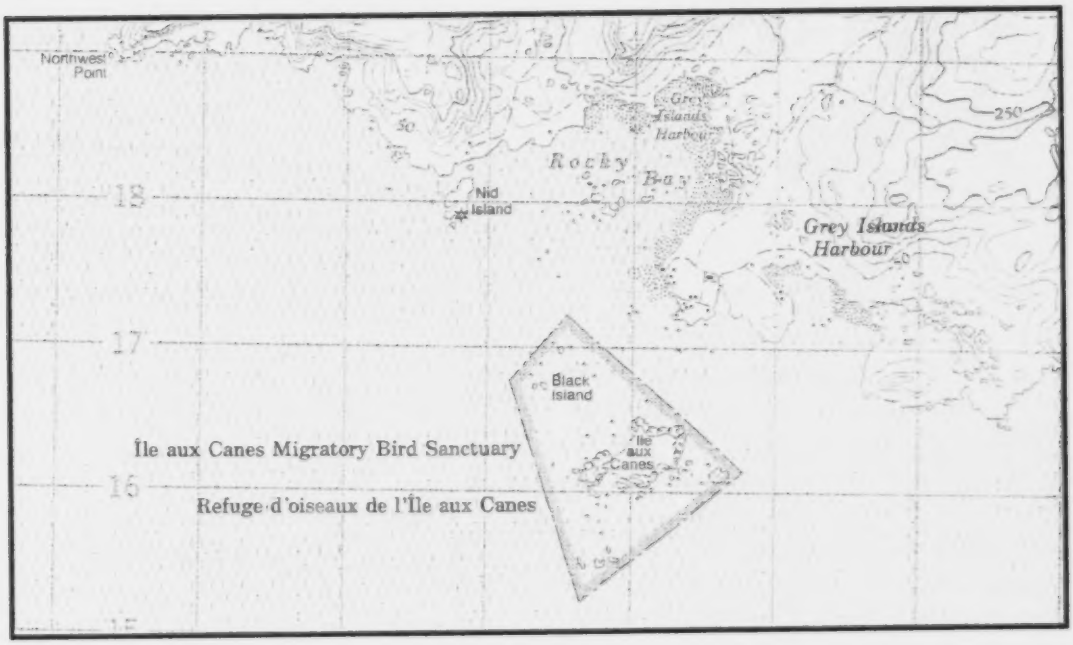

Figure 8. Isle aux. Canes (Green Island) Bird Sanctuary Locator Map

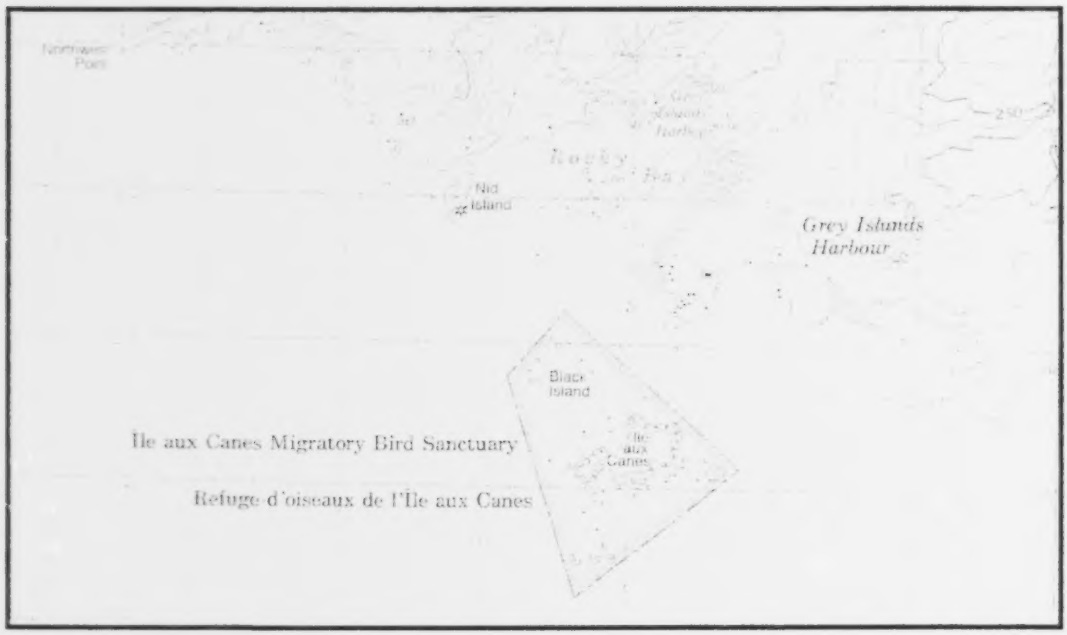

Figure 8. Isle aux. Canes (Green Island) Bird Sanctuary Locator Map

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Kentville Migratory Bird Sanctuary

Location

Kings County, Nova Scotia, just west of the town of Kentville, a portion of the Sanctuary being within the town boundaries.
Latitude: 45°05'N Longitude: 64°32'W
National Topographic Series: 21H/02(Berwick)

Area 200 hectares

Land Ownership

Department of National Defence - 20 % (a portion of the northern section of the Sanctuary lies within the boundary of Camp Aldershot Military Base).
Private - 76% (numerous owners)
Un-deeded - 4% - river and water area

Major Habitat Types

Marsh and river channel..... 37%
Old fields..... 10%
Open pine forest 19%
Deciduous woodlands 21%
Residential and industrial areas..... 13%

Description of Area

The main feature of the sanctuary is a 100 ha flood plain tussock marsh with numerous small shallow ponds and backwaters along the meandering course of the Cornwallis River. The river varies in depth from one to three meters and is slightly brackish at the eastern end of the sanctuary where there is a minor tidal influence.

The sanctuary is bounded on the north by McIvern Square Road and Brooklyn Streets and includes a section of the Camp Aldershot Army Base. To the south it borders on the main line of the Dominion Atlantic Railway. The entire southern half of the sanctuary (that portion south of the Cornwallis River) is within the town limits of Kentville and includes some small housing sub-divisions and industrial facilities.

Much of the marshland is covered with a tall dense stand of reed-canary grass (*Phalaris arundinacea*) along with smaller amounts of blue-joint (*Calamagrostis canadensis*) and spike rush (*Eleocharis palustris*). Cattail (*Typha latifolia*), giant burreed (*Sparganium eurycarpum*), manna grass (*Glyceria grandis*) and horsetail (*Equisetum fluviatile*) grow along the river and the marsh edge. The most common aquatic plants that occur in the river and in some small backwater ponds are floating leaf pondweed (*Potamogeton natans*), sago pondweed (*P. pectinatus*), large-leaf pondweed (*P. amplifolius*) and duckweed (*Lemna minor* and *Spirodela polyrhiza*). Bass weed (*P. richardsonii*) and coontail (*Ceratophyllum demersum*) are abundant in

sections of the meandering river channel.

The sandy upland soils of the north side of the Sanctuary support an open pine forest dominated by red pine (*Pinus resinosa*) and white pines (*Pinus strobus*), although scattered red maple (*Acer rubrum*), red oak (*Quercus rubra*) and white spruce (*Picea glauca*) are also present. The deciduous woodlands on the south side of the marsh consist of red maple, red oak and white birch.

Public Use

The sanctuary does not receive much public use other than a very limited amount of wildlife viewing and canoeing.

There have been several proposals by town planners to enhance public use of the site; however, no development has taken place. The town does not actively promote the area as a place to use, as it has no designated means of access or other facilities. Some private landowners in the area have roads and walking trails that would go up to or are adjacent to the sanctuary from which users could gain access.

Importance to Wildlife

This sanctuary is of local significance only and current data is lacking to properly evaluate its importance to wildlife. Previous reviews and local informants concur with the evaluation that suggests the following use. Broods of Black Duck, Blue-wing Teal and Green-wing Teal have been observed in the sanctuary marsh. The number of broods reared on the marsh does not appear to be high; some authorities suggest about 10 to 20 per year. The uncertainty of brood numbers is due to the excellent cover provided by reed-canary grass and other marsh plants. The principal brood rearing areas are the backwater ponds leading off the river. Those shallow ponds support an abundant plant and invertebrate animal life making them very suitable for brood rearing.

During late summer and early fall the Sanctuary serves as a fall concentration area for waterfowl with numbers reaching several hundred.

Species at Risk

Kentville MBS, falls within the range of the wood turtle (*Clemmys insculpta*) which is listed as vulnerable by COSEWIC and Sensitive by the Province of Nova Scotia but there are no known records of this species occurring within the sanctuary.

Historical and Present Land Use Conflicts

During the summer of 1939 the Kings County Fish and Game Association of R. W. Tufts (Federal Migratory Bird Officer) undertook to secure the signatures of all the landowners in an area just west of Kentville (known as Moore Meadows) to have the site declared a bird sanctuary. By late August a petition containing the signatures of the twenty-four landowners and the support and approval of the Mayor of Kentville and other senior officials was forwarded to Ottawa. The Kentville Migratory Bird Sanctuary was declared on the 25th of October 1939 (PC #

3252).

Since the establishment of the sanctuary the town of Kentville has expanded to the west and small housing developments and industrial facilities have developed along the south-east boundary. The Military Base at Camp Aldershot extends to the edge of the marsh and in recent years numerous roads have been developed in the pine forest along the NW side of the sanctuary.

In 1962 there was a proposal to build a 150m weir and spillway to flood the entire marsh and make it into a recreational lake to be known as Condon Lake. The project did not get support and was dropped.

The CWS has entered into an arrangement with the Department of National Defence (DND) for troops to make use of lands that fall within the sanctuary boundary on a limited basis. This was done to allow for their training exercises to take place in what is known as Training Areas 3 and 6 of the Atlantic Area Training Centre Aldershot.

First Nations

The nearest First Nation reserve to the Kentville MBS is at Cambridge No.32 (9 km), the next closest is Horton No.35 (24 km) away.

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations
PC# 3252, October 25th, 1939.

According to the files some enforcement problems have occurred in the past. The sanctuary is difficult to keep adequately posted due to its location in an urban area and thus a high rate of loss of signs occurs.

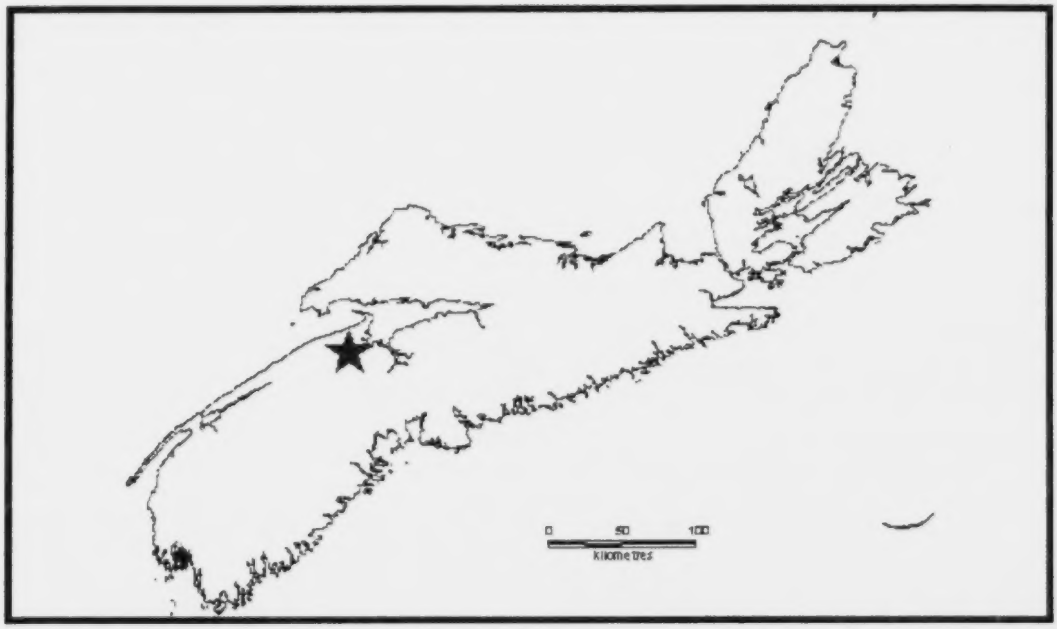
Selection Criteria Met

1. Criteria not met. Wetland attracts birds to the Kentville, MBS, but is not believed to be in any substantial numbers. Additional data on bird use is required

2. Criteria not met. There is no information to suggest that there are significant enough populations within the area to meet this criterion. Additional data on bird use required.

3. Criteria not met.

4. Criteria partially met. The site does not figure prominently in the overall management of any of the species that use this site. It does however, provide an educational and interpretative potential to the Town of Kentville. Preliminary discussions with the Town of Kentville in the early 1990's suggested there was a public interest in retaining the MBS.



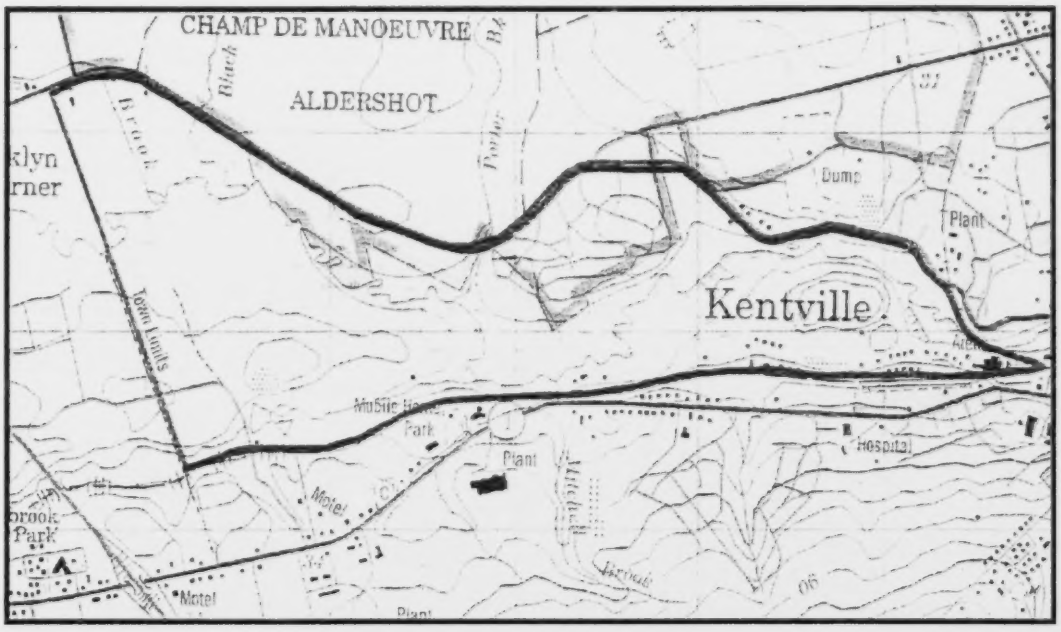


Figure 9. Kentville Migratory Bird Sanctuary Locator Map

Recommendations

1. Review the status of the sanctuary with officials of the town of Kentville (planning Office) and the Kings County Fish and Game Association.

2. Conduct more inventories to assess what is presently using the site or that occurs there.

3. De-list the MBS unless a compelling reasons are put forward retain its status.

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Machias Seal Island Migratory Bird Sanctuary

Location

Charlotte County, New Brunswick, 20 km SW of Grand Manan.
Latitude: 44°30'10"N Longitude: 67°06'05"W
National Topographic Series: 1: 50 000 21B/10 (Grand Manan)

Area

Ten hectares of land plus "all waters lying within a distance of one statutory mile of the line of high-water mark bordering the island".

Land Ownership

Federal Government - Department of Fisheries and Oceans (DFO)-Canadian Coast Guard (CCG) owns the island (deed #29279 filed at the registry of deeds, Charlotte County, New Brunswick on 14 May 1912. Libro 214, folio 144 and filed as No. 2 in plan book No. 1). However, sovereignty over the island is disputed by the United States despite the fact that "Canada" has maintained a lighthouse on the island since 1832.

Major Habitat Types

Developed land (light station, buildings and lawn area) 4%
Vegetated area (grasses, sedges, herbs)..... 50%
Exposed rock..... 46%

Description of Area

Machias Seal Island is a tiny treeless oceanic island rising barely 9 m above sea level. The periphery of the island is characterized by rocky ledges and huge granite boulders. The inter-tidal rocks and ledges are covered with a thick growth of rockweed (*Fucus sp.*) while those above the high tide line, but still subject to heavy sea spray and wash, are mostly barren with some lichen growth.

In striking contrast to the wave-battered shores, the higher part of the island is a lush green meadow. The granite rocks are covered with a thin organic soil that supports a wide variety of plant life including sedges, grasses, stonecrop (*Sedum sp.*), angelica (*Angelica sp.*), yarrow (*Achillea sp.*), docks (*Rumex sp.*) and asters. On the highest part of the island is the DFO-CCG light station and its supporting facilities including two keepers' houses and a fuel storage shed. The second keepers' house is now being used by the CWS and researchers during the summer months. The former boathouse, generator shed and haul up ramp along with an old light keepers' house are no longer present and have been dismantled and removed.

In addition to Coast Guard Buildings there is also a deck beside the light keeper's residence, an outhouse and four observation blinds for use by visitors. There are also five research blinds that are not open for public use at various locations around the island.

Public Use

The island has served as a navigational light station since 1832. The operation of the station requires housing of the two light keepers and the once monthly supply by helicopter and twice yearly by supply boat. Routine maintenance and changing of equipment by DFO-CCG work crews is usually done during spring and fall.

The principal public use of the sanctuary is by visiting naturalists and photographers. From 1973 to the mid 1980's, total numbers of visitors have varied from a low of 500 to a high of 1300 and have averaged around 800 annually. Up to 1981 only two charter operators brought visitors to the Sanctuary; however, a third operator began in 1982 bringing the average annual visitation for the past three years up to 1200, of which 90% land on the island for a brief visit. These numbers have remained consistent to the present day (2003). Approximately 80% of the visitors are Americans. Presently the sanctuary continues to be a destination for many and visitation is done according to schedule allowing two of the three charter operator's access each day to a maximum of 30 persons. Public use is restricted to designate pathways and observation blinds. When visitors are not in one of the observation blinds they must stay in the designated visitor area beside the light keepers house.

Importance to the Resource

This tiny island is probably the most important seabird-nesting colony south of Newfoundland. Approximately 2800 pairs of Atlantic Puffins (*Fratercula arctica*) nest here, the largest colony of Puffins south of Great Island, Newfoundland. Puffins occur in small numbers at Bird Islands, Cape Breton; Pearl Island, Lunenburg Co., Nova Scotia and at Matinicus Rock, Maine, but over 90% of these southern nesting Puffins occur on Machias Seal Island. In association with puffins are 900 breeding pairs of Razorbill (*Alca torda*) along with 300+ non-breeding Common Murre (*Uria aalge*). The puffins and razorbills nest among the boulders just above the over-wash zone. Well over 100 species have been recorded on the island as migrants or incidental visitors.

The vegetated portion of the island is the nesting site (in 2002) for approximately 2800 pairs of Arctic Tern (*Sterna paradisaea*) and 1330 pairs of Common Tern. This is the largest known colony of Arctic Tern in eastern North America. Nesting in an area of thick turf are a few (approx. 150+) pairs of Leach's Storm Petrel (*Oceanodroma leucorhoa*).

Also nesting in the sanctuary are small numbers of Spotted Sandpiper (*Actitis macularia*), Common Eider and Savannah Sparrow (*Passerculus sandwichensis*). Tree Swallow (*Tachycineta bicolor*) has also nested but in the past few years have not been nesting as regularly. Additionally, there are recent nesting records for Laughing Gull (*Larus atricilla*) and Roseate Tern (*Sterna dougallii*).

Species at Risk

No plant species at risk either provincially or nationally are known to exist on the island. Many of the plants currently present have been introduced since occupation by man and livestock earlier in the history of the island beginning in the late 1800's. Roseate Tern (*Sterna dougallii*) an endangered species, have been known to nest in the past in small numbers (one to two pair)

and a few pair have begun to reappear around the colony with at least one nest confirmed but unsuccessful in recent times. Monarch Butterflies (*Danaus plexippus)*, a species of concern, has been known to occur on the island, likely as a migrant.

Historical and Present Land Use Conflicts

The vulnerability of seabird nesting colonies to man's destructive activities has made it imperative that they be afforded special protection. Provision was made to give the seabird colonies on Machias Seal Island this special protection in 1944, when the island was established as a Federal Migratory Bird Sanctuary under the Migratory Birds Convention Act.

During the 1980's increased visitation by birders, photographers and other interested people aroused new concern for the welfare of the birds nesting on Machias Seal Island. Unknowingly, an enthusiastic naturalist may be as harmful to a nesting colony as someone wilfully molesting the birds and their nests. Because nesting densities are high, any continued disturbance can cause a great deal of damage. The primary concern at the present time is maintaining the population of Arctic Tern, which act as the island's first line of defence against avian predators such as gulls. If the highly aggressive terns were to decline in numbers, gradually the more passive breeding birds (puffins and razorbills) will be exposed to increasing predation by gulls.

Thus, with annual number of visitors to the MBS exceeding 1000, new regulations were proclaimed in 1983 that restricted the time of visits to three hours, restricted movement of people over the island and limited daily visitation to 25 persons. These were further revised to allow two charter boats to land a maximum of 30 persons per day.

Unfortunately the location of the site, along with the disputed ownership, greatly complicates the administration of the sanctuary and enforcement of the regulations. There have been occasions where charter operators have violated the sanctuary regulations but with introduction of a schedule and issuance of permits there have been few if any violations in the past ten years.

First Nations

Being offshore there are no First Nation Reserves in the immediate vicinity. The Brother's No.18 on the New Brunswick Mainland (89 km) away and there is Bear River No.6, on the Nova Scotia mainland (39 km).

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations under the Migratory Birds Convention Act (PC# 2678, 17 April 1944).

RCMP from Grand Manan have made infrequent visits to the sanctuary since the mid-1950's, mostly to check on reports of "egging" in the Tern colony. During the 1960's and early 1970's the part-time CWS warden at the Grand Manan Sanctuary was requested to make an annual patrol of the sanctuary.

Following a summer study by the Canadian Nature Federation in 1971 the CWS has had a student resident on the Island each summer since that time. The principal responsibility of that

student is to inform the visitors on sanctuary regulations. Observation blinds (4) are installed and visitors are restricted to designated walkways. Currently the island is still staffed by a CWS caretaker during June and July to monitor visitor activities and minimize disturbance to nesting birds.

Since 1995, the Atlantic Co-operative Wildlife Ecology Research Network (ACWERN) through the University of New Brunswick has had graduate and honours students conducting research studies on the island.

Infrequent visits to the Sanctuary by CWS Enforcement Co-ordinators and the RCMP provide an enforcement presence. The CWS summer student has no enforcement authority and is instructed to advise the regional office of violations.

Selection Criteria Met

1. Criteria met. The site supports six species of nesting colonial seabirds that require remote secure nesting areas. These sites are vulnerable to a host of threats if they are not protected.

2. Criteria met. All species present are especially vulnerable to human disturbance and are only known to use a few sites in the Atlantic Region.

3. Criteria met. It represents the largest seabird colony of its kind in the Maritime Provinces.

4. Criteria met. The site is extremely important for the management of resident species and ties in with other colonies at a regional and international level to maintain these species at sustainable levels. The site has high educational and interpretative value with upwards of 1000 visitors a year.

Recommendations

1. Continue to monitor the seabird populations in co-operation with ACWERN.

2. Endeavour to keep the sanctuary open to visitation by naturalists as long as we are able to adequately control visitation by having a seasonal employee resident on the Island during summer.

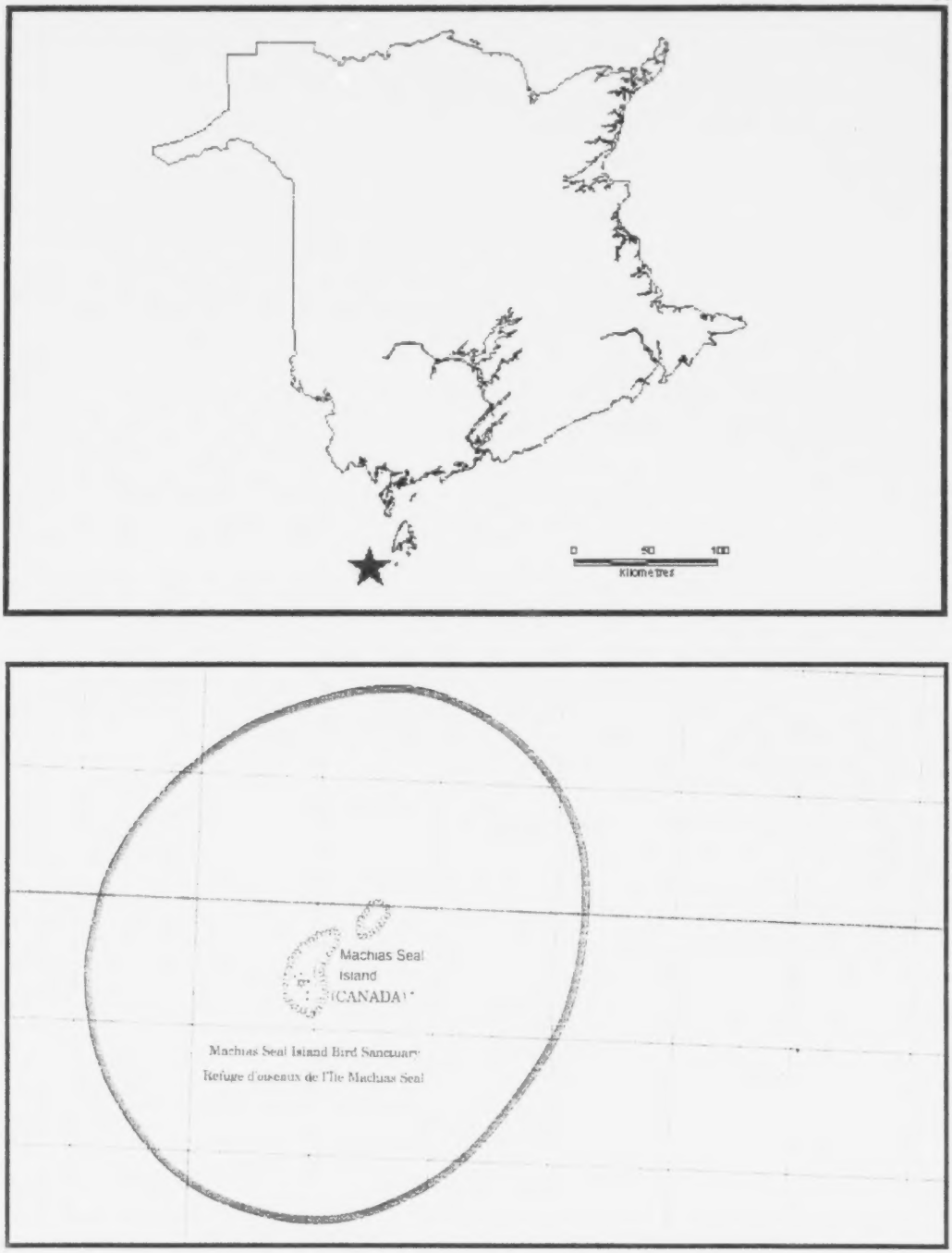

Figure 10. Machias Seal Island Migratory Bird Sanctuary Locator Map

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Port Hebert Migratory Bird Sanctuary

Location

Queen' s and Shelburne Counties, Nova Scotia, approximately 185 km south-west of Halifax or 35km west of the town of Liverpool on highway #103.
Latitude: 43°52'N Longitude: 64°58'W
National Topographic Series: 1:50 000 20 P/15 (Port Mouton)

Area

350 hectares including up to the high tide water mark.

Land Ownership

Un-deeded 99% - Shallow tidal waters and mudflats
Private 1% - Sinclair Island

The surrounding upland (outside of the sanctuary) is held by Bowater - Mersey Paper Company, Provincial Crown, Canadian Wildlife Service and two private owners.

Major Habitat Types

Shallow coastal water with eelgrass flats exposed at low tide 89%
Channels and deeper areas..... 10%
Wooded island 1%

Description of Area

Port Hebert is a shallow coastal inlet 12 kilometres in length and 1 to 2 kilometres wide at its mouth widening to over 2 kilometres at the innermost limits. The sanctuary section is located on the north-eastern extremity of the inlet.

The tidal range of 1.2 to 2.4 metres exposes extensive areas of eelgrass flats at low tide with meandering deeper channels intersecting the flats. Two small brooks, Mitchell's Brook and Granite Village Brook flow into the sanctuary.

The muddy intertidal flats support luxuriant growths of eelgrass along with marine algae (*Ulva sp.* and *Enteromorpha sp.*). Marine invertebrates, including moon-shell (*Lunatia heros*), dog whelk (*Nassarius sp.*), macoma (*Macoma sp)* and periwinkle are common.

The shoreline about the sanctuary is rocky with a small section of salt marsh at the mouth of Mitchell Brook. The adjoining upland is mixed forest consisting of spruce, fir, red maple, and white birch with scattered mature white pines (*Pinus strobus*).

Public Use

Port Hebert inlet is surrounded by undeveloped forested upland. The Bowater Mersey Paper Company owns a 150 ha section of upland along highway # 103 and extending to the edge of

the sanctuary at Mitchell's Brook. The company has a "pocket wilderness" nature trail that provides an interpretative message to tourists.

The western side of Port Hebert inlet is not included in the MBS and waterfowl hunting is popular there throughout the late fall period.

Importance to Resource

The Port Hebert Migratory Bird Sanctuary (in close association with Port Joli MBS and Sable River MBS) harbours the largest flocks of migrating and wintering geese on the south-west shore of Nova Scotia with numbers averaging 3000 and at times exceeding 5000 birds. Geese first arrive at Port Hebert in late September and remain until mid-March with peak numbers occurring in late October-early November. Occasionally in mid-January severe winter weather causes the inlet to freeze over and the wintering waterfowl are forced to move to the nearby Sable River Migratory Bird Sanctuary where open water is still available.

The Sanctuary is of extreme importance to the Canada Goose, with numbers up to 3000 birds in late January early February. Migrant Black Duck start to build up in the Sanctuary as early as late August and significant numbers remain there until early April.

Smaller numbers of Green-winged Teal and Northern Pintail use the Sanctuary during early fall.

Diving ducks including Common Goldeneye, Bufflehead, scaup, scoters and mergansers arrive in late fall and remain in small numbers (a few hundred) throughout the winter. Port Joli, Haley Lake and Sable River all having protection complement one another and further enhances the importance of each sanctuary to waterfowl in the region.

Species at Risk

Few species at risk are known to occur except for Harlequin Ducks that winter along adjacent coastline and Piping Plover that use beaches in the general area, outside of the sanctuary. Six species of rare plants occur within the sanctuary along with the adjacent Port Joli Migratory Bird Sanctuary. Hooked Agrimony *Agrimonia gryposepala*, Checkered Rattlesnake-plantain *Goodyera tesselata*, Golden Dock *Rumex maritimes var. fueginus*, Elliot's Goldenrod *Solidago elliotii*, American Germander *Teucrium canadnese*, Gaspe Penisula Arrow-grass and *Triglochin gaspenis* are all found here (Newell, 2003).

Historical and Present Land Use Conflicts

The entire upper reaches of Port Hebert (above Timber Island) were established as a Provincial Sanctuary in 1919 in order to protect "geese and other waterfowl". In 1926 a small section of outer Port Hebert (between the wharf and McDonald's Reef) was also included in the Sanctuary. The federal government took over responsibility for the sanctuary in 1941 and maintained the same boundaries until 1950 when the lower section was revoked as well as the western side of the harbour west of a line from the mouth of Granite Village Brook to Timber Island. In 1975 the Sanctuary was cancelled and replaced by a closed hunting zone under Schedule A of the Migratory Birds Regulations which closed the entire northern two-thirds of the harbour from the fishermen's wharf inward. In 1977 the Sanctuary was reinstated and the management zone

dropped. See MacKinnon et al. (1994) for additional information.

The numerous changes over the years since establishment have related to problems with enforcement of regulations for adequate protection of the birds, and at the same time providing ample opportunity for hunting in the region.

With the exception of one cottage, no development, other than the Bowater Nature Trail, has occurred about the Sanctuary over the past 40 years. There is some considerable potential for recreational developments in the area and land sales to non-residents are common. This development pressure prompted CWS to acquire a 41.9 ha parcel on the eastern side of the Sanctuary in 1984.

First Nations

There is no large First Nation Reserve nearby; the closest would be Ponhook No.10 (35 km), Medway River No.11 (46 km) or Wildcat No.12 (55 km). Sweet Grass (*Hierchloe odoranta*) is found in a few locations in Port Hebert and Port Joli MBS's (Newell, 2003).

Protective Status

Migratory Birds Sanctuary Regulation under the MBC Act (PC#1977-2638, 22nd September 1977.)

Some enforcement problems do occur within the Sanctuary due to the fact that the boundary is the high water mark and access to the harbour can be gained by a number of small trails including the Bowater-Mersey nature trail. Some intrusion by hunters across the southern and western boundaries via boats also occurs.

Selection Criteria Met

1. Criteria met. Area supports large number of wintering geese and Black Duck.

2. Criteria met. The area provides a place relatively free from human disturbance and hunting pressure.

3. Criteria met. Together with Port Joli and Sable River supports the largest wintering population of geese in the area (30% of Atlantic Region Canada Goose wintering population).

4. Criteria met. Along with the other sanctuaries in south-western Nova Scotia it figures high in the overall management of waterfowl in the region. This site is often used by naturalist groups, ecotourism and others in community for bird watching.

Recommendations

1. Continue monitoring wintering populations throughout the winter months.

2. Consider implementing research into the food resource in the area for these populations.

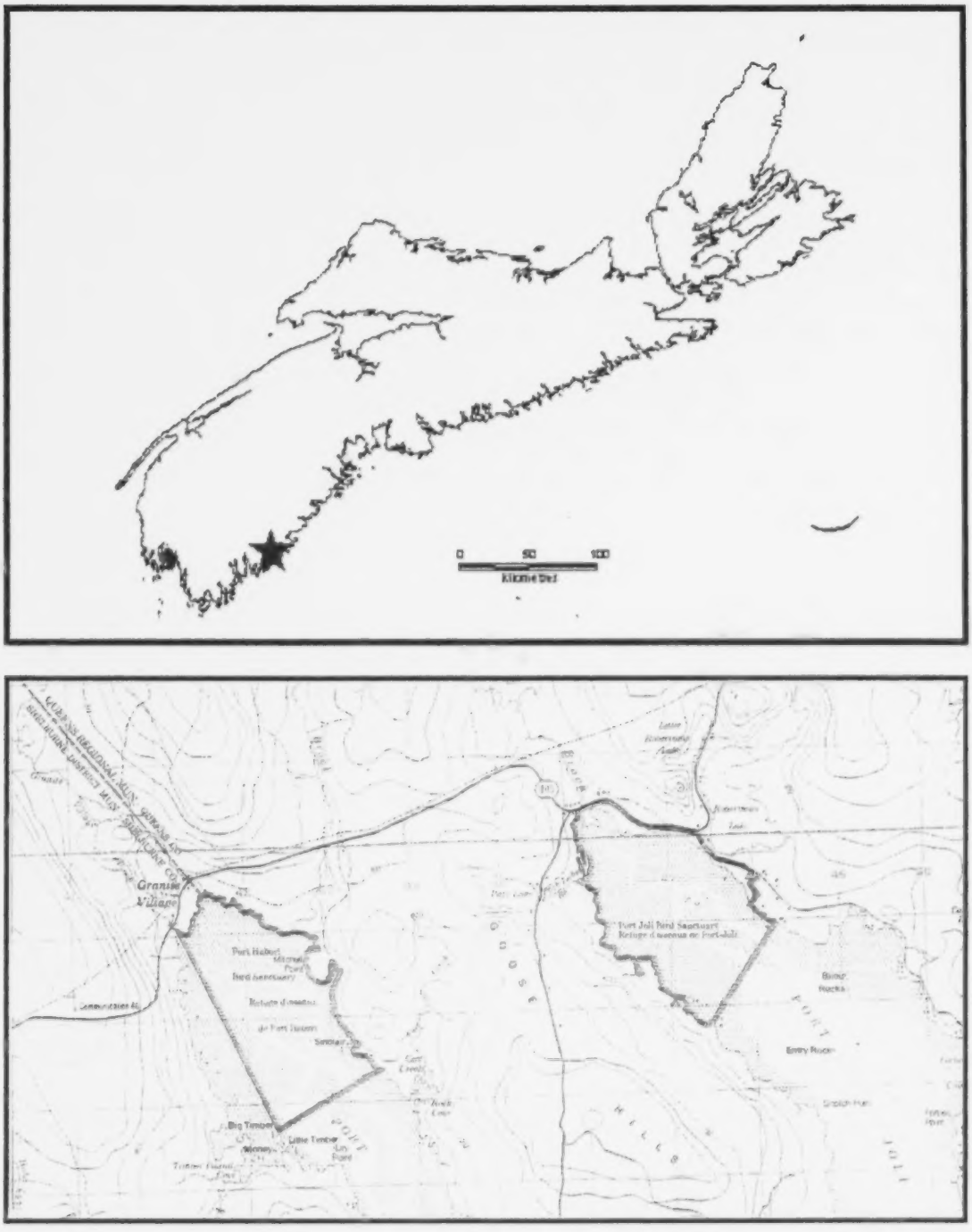

Figure 11. Port Hebert Migratory Bird Sanctuary Locator Map

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Port Joli Migratory Bird Sanctuary

Location

Queen's County, Nova Scotia, approximately 180 km south-west of Halifax, or 30 km west of Liverpool on highway #103.
Latitude: 43°52'N Longitude: 64°55'W
National Topographic Series: 1:50 000 20 P/15 (Port Mouton)

Area

280 hectares

Land Ownership

Federal Government (CWS) ..... 50.1 ha
Private Owners (approx. 15 lots) ..... 30 ha
Un-deeded tidal flats & rocky islets ..... 200 ha

Major Habitat Types

Shallow estuary & inter-tidal flats 80%
Salt marsh 5%
Mixed second - growth forest 15%

Description of Area

Port Joli is located in the southern coastal lowlands region of Nova Scotia, an area characterized by low hills and ridges with intervening lakes and bogs and prominent coastal inlets. The sanctuary is located at the uppermost limits of a 10 km inlet that varies in width from 1 to 4 km. The tidal waters within the sanctuary are extremely shallow, and tidal range of 1.2 to 2.4 m exposes extensive areas of mud and sand flats at low tide. Several small rocky islets and ledges occur within the sanctuary and the shores are rocky and strewn with large boulders. A small band of salt marsh often occurs between the rocky shoreline and the edge of the mud-flat zone.

The mud flats support luxuriant growths of eelgrass, the plant which is largely responsible for the area's importance as migration and winter habitat for waterfowl. There is some anecdotal concern about a redistribution of eelgrass, possibly caused by an increase in green crabs (*Carcinus maenas*). Associated with the eelgrass is an abundant growth of marine algae (*Ulva sp.* and *Enteromorpha sp.*) along with marine invertebrates including moon-shell, dog whelk, gem shell (*Gemma gemma*), macoma and periwinkle.

Rockweed (*Fucus sp.*) and common wrack (*Ascophyllum sp.*) occur on rocky inter-tidal reefs along the shores and on rocky islets within the Sanctuary.

Numerous small salt marshes dominated by cord-grasses (*Spartina sp.*) occur along the western shore of the area. The adjoining upland around the sanctuary is second-growth mixed forest consisting of spruce, fir, red maple and white birch. Scattered white pine and red oak are also

present.

Public Use

During the fall and winter months, local residents and birdwatchers from elsewhere in the province often visit the area to observe the resting and feeding flocks of waterfowl. Hunting is popular in nearby lakes and coastal sites outside the sanctuary.

Importance to Wildlife

Commencing in early September flocks of geese slowly start trickling into the MBS gradually building up to 2000 geese by mid-October and 3000 plus by the end of December. Much movement occurs between the harbour and nearby lakes (Robertson and Wilkins) until the opening of the hunting season. Geese remain in this sanctuary throughout the winter unless severe ice conditions force them to move to open areas of other nearby Sanctuaries.

Black Duck, in numbers sometimes exceeding one thousand, are attracted by the abundant invertebrate fauna and use the sanctuary throughout fall and winter. During fall migration over one thousand Green-winged Teal feed in the shallows of Port Joli harbour by day and move into nearby Louis Lake at night along with smaller numbers of Northern Pintail.

Diving ducks including the Common Goldeneye, Bufflehead, scaup, scoters and mergansers arrive in late fall and remain in small numbers through the winter.

Species at Risk

No listed species at risk are known to occur here except for Piping Plover, which uses beaches in the area outside of the sanctuary. Six species of rare plants occur within the sanctuary along with the adjacent Port Hebert Migratory Bird Sanctuary. Hooked Agrimony (*Agrimonia gryposepala),* Checkered Rattlesnake-plantain (*Goodyera tesselata),* Golden Dock (*Rumex maritimes var. fueginus), Elliot's* Goldenrod (*Solidago elliotii),* American Germander (*Teucrium canadnese),* Gaspe Penisula Arrow-grass (*Triglochin gaspenis),* (Newell, 2003) are all found here.

Historical and Present Land Use Conflicts

The inner section of Port Joli harbour was established as a Provincial Sanctuary in 1915 in order to protect "wild geese" from hunting pressure. The area included in this early legislation was roughly the same as it exists today except the boundary was the high water mark. In 1926 the Sanctuary was more than doubled in size and extended out the harbour to Forbes and Scotch Points. In 1935 a portion of the area on the east side of the harbour was removed and in 1950 the Sanctuary reverted to the area covered in the 1915 description. In 1941 the Federal Government took over responsibility for the sanctuary (PC # 7333-1941).

Port Joli remained a sanctuary until 1975 when it was revoked in favour of a management zone restriction at the nearby Port Hebert and Sable River areas. However, following an evaluation of the management zone concept and in response to public opinion, the sanctuary was re-established in 1977 and for the first time included a fringe of upland. In 1980 the sanctuary

boundary was altered slightly to include all lands owned by CWS on the NE side of the harbour (see MacKinnon et al. 1994).

The numerous changes over the years have been prompted by problems with enforcement of regulations for adequate protection of the waterfowl, and at the same time to provide adequate opportunities for hunting in the area surrounding the sanctuary.

Generally, land use about the sanctuary has changed very little from its inception until the early 1960's. During the 1960's and 70's most of the land bordering the east side of the harbour was divided into cottage-size lots and many sites were sold as recreation properties. That along with increasing sales of property in the area to non-residents, prompted CWS to initiate acquisition of a protective fringe of upland around the sanctuary. During the period 1977-83 CWS acquired over 30 parcels of land totalling 50.1 ha thus securing all land along highway #103, most of it bordering the St. Catherine's River Road and scattered parcels on the west side of the Sanctuary.

First Nations

There are no large First Nation reserves nearby; the closest would be Ponhook Lake No.10 (34 km), Medway River No. 11 (45 km) or Wildcat No.12 (54 km).

Protective Status

Migratory Bird Regulations under the MBC Act PC3 1980-2435, 12 September 1980.

Strict enforcement of the sanctuary is difficult owing to a tradition of poaching in the area and ready access to the harbour via roads. The CWS Enforcement Co-ordinator in Nova Scotia and the RCMP detachment in Liverpool make regular patrols to the Sanctuary. The CWS has not had a warden resident in the area since 1974.

The inclusion of a fringe of upland within the sanctuary in 1977 has assisted enforcement officers, as violations of the old boundary (mean high water mark) were most difficult to prove.

Selection Criteria Met

1. Criteria met. Area supports large number of wintering geese and Black Duck.

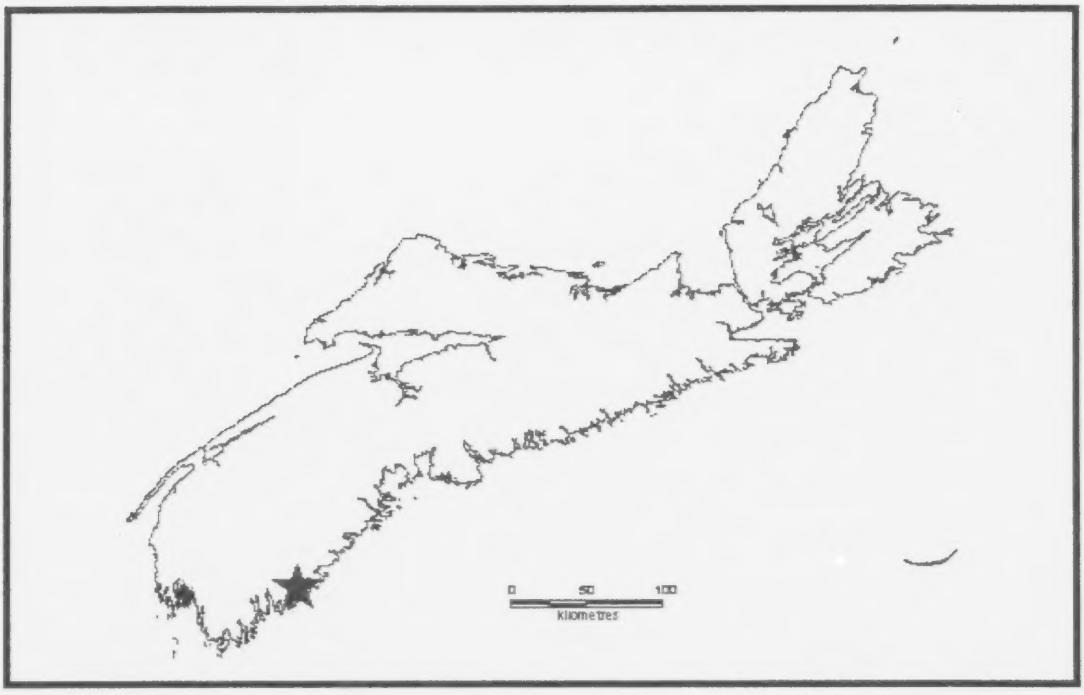
2. Criteria met. The area provides a place relatively free from human disturbance and hunting pressure.

3. Criteria met. Together with Port Hebert and Sable River supports the largest wintering population of geese in the area (30% of Atlantic Region Canada Goose wintering population).

4. Criteria met. Criteria met. Along with the other sanctuaries in south-western Nova Scotia it figures high in the overall management of waterfowl in the region. This site is often used by naturalist groups, ecotourism and others in community for bird watching.

Recommendations

1. Maintain the present status of this Migratory Bird Sanctuary.



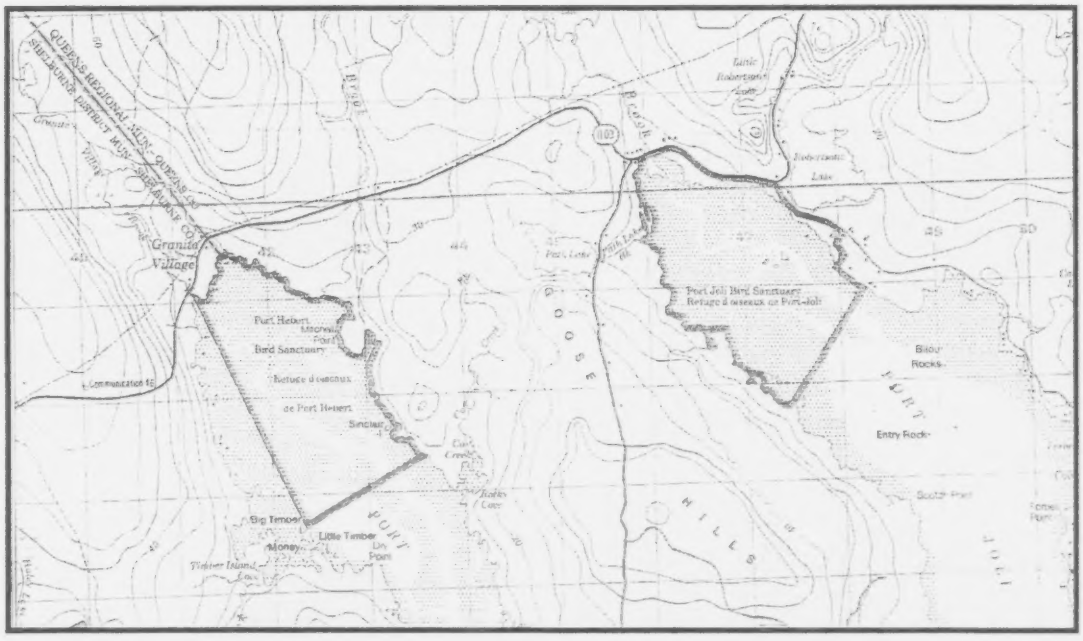


Figure 12. Port Joli Migratory Bird Sanctuary Locator Map

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Sable Island Migratory Bird Sanctuary

Location

Halifax County, Nova Scotia, Approximately 180 km south-east of Canso and 300 km east of Halifax.
Latitude: 43°56'N Longitude: 60°00'W
National Topographic Series: 1:50 000 10 O/13 (Sable Island)

Area

2350 hectares

Land Ownership

Federal Government (100% under the administration of the Ministry of Transport).

Major Habitat Types

Over wash (terminal) sand spits..... 18%
Beach 23%
Consolidated sand dunes 54%
Salt water lake (Wallace) 5%

Description of Area

Sable is truly an oceanic island, lying some 150 km off the Nova Scotia coast. The island is a crescent-shaped ribbon of sand extending along an east-west axis for approximately 32 km. The Island consists of 20 km of consolidated dunes and long un-stabilized terminal bars at each end. Its maximum width is 1.5 km and the highest dunes approach 25 m. The north beach is steep and narrow, whereas the south beach is wide and flat. A dense growth of beach grass stabilizes the dunes, and small depressions, many filled with freshwater, occur between dune ridges. A 5 km salt-water lake (Lake Wallace) is about mid-way along the south beach.

Sable Island has a unique ecology and a stark but beautiful landscape. The flora is dominated by grasses and low shrubs; although numerous attempts have been made to introduce trees, none have survived. Beach grass dominates and stabilizes the dunes except for those that are eroded or building. In the more stable areas between the dunes, yarrow (*Achillea millefolium*), beach-pea (*Lathyrus japonicus*), evening primrose (*Oenothera parioflora*), bay-berry (*Myrica pensylvanica*), and goldenrod (*Solidago sempervirens*) are interspersed with beach-grass. Sandwort (*Arenaria lateriflora*) is abundant during summer along the terminal bars and in the upper reaches of the beaches. The freshwater ponds, which are most abundant near the west end, support a variety of aquatics including; water-smartweed (*Polygonum natans*), water-pepper (*Polygonum hydropiper*), and cow-lily (*Nuphar variegatum*) occurs in two of the ponds. Rush (*Juncus balticus*) and blue iris (*Iris versicolor*) are common around the margins of most ponds and depressions.

Sable Island has a constantly changing topography, as strong winds cause erosion and "blow-outs" in the dunes. Certainly Sable's continued existence is dependant upon the integrity of its

vegetative cover.

Public Use

Given the remoteness of the site along with restricted access there is little use by the public. The island does see occasional use by naturalists, journalists, and photographers but otherwise, as yet, there is no regular service for the public to access the site.

The Coast Guard is in the process of decommissioning navigational aids that up to the present it has maintained on the island. The Meteorological Service of Environment Canada and the Sable Island Preservation Trust operates an atmospheric research station with a staff of 4. Consisting of: one station manager, two weather technicians and one general maintenance person.

Facilities and supplies are located on the island to service offshore rigs in the event of an emergency.

Researchers from Environment Canada, Universities, Federal Fisheries and Non Government Organizations have sporadic projects at Sable.

Importance to the Resource

The natural wild fauna of Sable Island consists of birds, seals, insects and freshwater invertebrates. Birds are abundant everywhere in a situation that readily permits observation. Fifteen species nest regularly including Leach's Storm Petrel, Mallard, Black Duck, Northern Pintail, Red-breasted Merganser (*Mergus serrator*), Semipalmated Plover (*Mergus serrator*), Spotted Sandpiper, Least Sandpiper (*Calidris minutilla*), Herring Gull, Great Black-backed Gull, Common, Arctic and Roseate Tern, European Starling (*Sturna vulgaris*), and Ispwich Sparrow. American Green-winged Teal, Laughing Gull, and Black-legged Kittiwake have occasionally nested on the island. In addition to resident bird life there is an unusual abundance of migrants and exotic strays with over 200 species of birds having been recorded on the island.

Sable is the only known Canadian nesting place for the Ipswich Sparrow, a subspecies of the Savannah Sparrow. According to an independent researcher living on Sable, between 1200 and 3300 of Ispwich Sparrow return to the island each spring (see www. Greenhorsesociety.com). The researchers estimate that in the fall following a very good season, there may be as many as 14,000 Ispwich Sparrow on Sable Island.

Around1500 pair of tern, (5% Arctic, 80% Common and a few Roseate), nest in small colonies at more than fifty sites on the island. Approximately 700 pairs of gulls breed on the island with ~600 pair of Herring Gull and at least 80 pair of Great Black-backed Gulls nesting. All other species that nest occur in smaller numbers.

Both Harbour Seal (*Phoca vitulina*) and Grey Seal (*Halichoerus grypus*) occur here in large concentrations. The breeding Grey Seal population is considered the largest assemblage of the species in the world.

Species at Risk

No federally listed species are known to inhabit the island except for endangered Roseate Tern that has a sizeable colony. There are however, seven species of plants, chaffweed (*Centunculus minimus*), rush (*Juncus pelocarpus var.sabulonensis*), bulbrush (*Juncus bulbosus*), oblong-leaved pondweed (*Potamogeton oblongus*), false arnica ragwort (*Seneciopseudo-arnica*), pygmy-weed (*Tillaea aquatica*), and American frog-orchid (*Coelogossum viride var. virscens*) which are considered rare or of limited range provincially (see Appendix 1.).

The Harbour Seal population of Sable Island has seen some declines in recent years and will likely be assessed by COSEWIC in the future.

Historical and Present Land Use Conflicts

Sable Island has undergone great changes since the Portuguese discovered it in 1506. While a slow increase in the mean sea level and changes in oceanic currents no doubt are responsible for shifting the size and shape of the island over the centuries, many of the more drastic changes in the landscape can be attributed to the activities of man. At one time more than 100 people lived on the island and their activities along with their domestic animals have had a profound effect on the formerly stabilized portions of the islands.

In 1974 a multi-agency Sable Island Environmental Advisory Committee was formed to advise Ministry of Transport (MOT) on all matters relating to the environment of Sable Island. Over the past 10 years that Committee has reviewed numerous proposals and has sponsored Terrain Projects on the Island thus diminishing serious environmental impacts.

In 1977 the CWS established Sable Island as a Migratory Bird Sanctuary in order to better regulate research activity and to provide the island with an official "status" in keeping with its importance as a special site for avifauna.

In 1997, the Sable Island Preservation Trust in part sponsored by Environment Canada was established to ensure the long-term conservation of Sable Island. The goals of the trust were to bring together all users of the island and establish responsibilities for each of these groups. The Trust endeavours to continue with the components of conservation, operations, and research. There is also the goal of establishing educational and interpretative programs, maintain a human presence and to co-ordinate core services and activities. The trust has since become funded under the Atlantic Coastal Action Program to allow for the improved management of the Trust.

First Nations

Given the remoteness of the site there would be no First Nation Reserve closer than mainland Nova Scotia.

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations (PC# 1977-2638, September 22nd, 1977)

Regulations respecting the Government of Sable Island; passed November 22, 1961; under the Canada Shipping Act. The Ministry of Transport under the Canada Shipping Act is charged with the administration of the Island and restricts admission to the Island. Persons travelling to the island must obtain permission from the District Marine Agent in Dartmouth, Nova Scotia.

Selection Criteria Met

1. Criteria met. It is the only Canadian nesting site of the Ipswich Sparrow and supports other colonial nesting birds that require specific habitat.

2. Criteria met. The species that nest here require specific types of habitat free from human caused disturbance.

3. Criteria met. Supports only known Canadian Ipswich Sparrow nesting site and supports Roseate Tern which only occur at a limited number of sites at northern edge of range (three in Nova Scotia).

4. Criteria met. Site provides strategic nesting areas for threatened species and contributes to the overall management of these species.

Recommendations

1. Maintain adequate signage on the island to ensure all visitors are aware of the Sanctuary status.

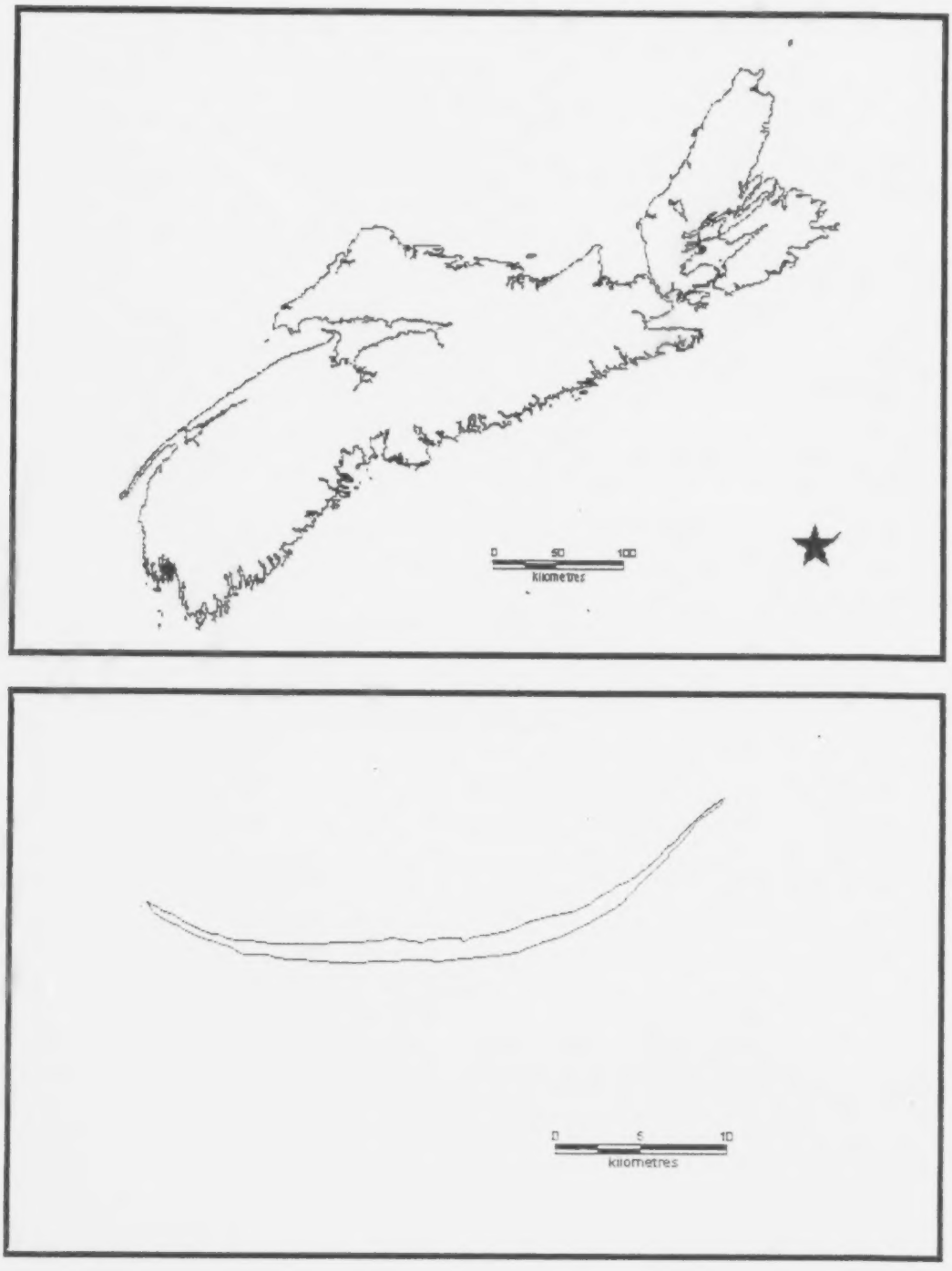

Figure 13. Sable Island Migratory Bird Sanctuary Locator Map

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Sable Island has an extensive amount of literature available; the titles listed below are only a small portion. For a more complete listing refer to Zimlicki and Welsh 1975.

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Sable River Migratory Bird Sanctuary

Location

Shelburne County, Nova Scotia, approximately 25 km East of Shelburne and 2 km off Highway #103.
Latitude: 43°49'N Longitude: 65°03'W
National Topographic Series: 1: 50 000 20 P/14 (Shelburne)

Area

260 hectares

Land Ownership

Un-deeded .... 90% (Water area)
Private..... 10% (Islands and salt marshes)

Major Habitat Type

Open estuarine water..... 90%
Rocky and wooded islands 1%
Salt marshes 9%

Description of Area

The Sable River estuary is over 10 km in length but generally less than 1 km wide. The sanctuary is located on the inner portion of the estuary and includes all shoals, rocks and islets up to the mean watermark on the adjoining upland. Scattered small salt marshes occur along both east and west sides and eelgrass is common in the shallow near shore water out to the much deeper mid-channel.

Unlike the nearby Port Hebert and Port Joli inlets that have only small brooks draining into them, Sable River inlet is subject to a major infusion of freshwater from Sable River that drains a watershed of over 250 square kilometres. This water flow, along with deeper channels, keeps portions of the estuary ice-free even in the severest of winters, a feature that makes the site particularly attractive to the area's over-wintering Canada Goose population.

The surrounding upland is largely undeveloped. However, some cleared fields, along with a few homes, border the Sanctuary on the western side.

Public Use

The site does not receive much public use except for viewing of flocks of geese and ducks in the late fall and winter. Waterfowl hunting is popular in the outer portion of the estuary.

Importance to the Resources

Several hundred Canada geese and Black Duck use the sanctuary throughout the fall along with smaller numbers of Green-wing Teal. However, during exceptionally cold winters most of the nearby Port Joli and Port Hebert Migratory Bird Sanctuaries freeze over for a short period during mid-January to late February. At that time a large percentage of the over wintering Canada Goose population in the region moves to the Sable River section which remains ice-free in some of the mid-channel areas. Goose numbers during those periods can exceed 3000 birds.

Species at Risk

No known species at risk occur although Curly-Grass Fern (*Schizaea pusilla*) which is not listed, but considered uncommon, is found here (see appendix 1).

Historical and Present Land Use Conflicts

Sable River was originally established as a Provincial Sanctuary in 1919 and remained that way until 1941 when the Provincial Sanctuary was replaced by a Federal Migratory Bird Sanctuary (PC# 7333, September 20, 1941). The federal sanctuary designation remained unaltered until 1975 when it was revoked and replaced as a closed hunting zone under Schedule "A" of the Migratory Game Bird Hunting Regulations. That closed hunting zone included both the inner and outer portions of the estuary and was in effect from January 2nd to the end of the waterfowl hunting season. In 1980 the original Sable River Migratory Bird Sanctuary was re-established (PC# 1980-2435, September 12, 1980) (See MacKinnon et al. 1994).

Little change has occurred in land use around the sanctuary in recent times; however, the attractiveness of the site may well lend itself to recreational cottage or retirement developments.

First Nations

There are no large First Nation Reserves nearby; the closest would be Ponhook Lake No.10 (40 km), Medway River No.11 (33 km) or Wildcat No.12 (61 km).

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations under the Migratory Birds Convention Act (PC# 1980-2435, September 12, 1980).

The exact determination of the sanctuary boundary at the "high tide water mark" has caused some concern amongst enforcement officers and some degree of uncertainty (especially in the salt marsh areas) in the minds of hunters.

Selection Criteria Met

1. Criteria met. It supports large concentrations of wintering waterfowl that require resting and feeding areas. Sable River MBS is especially important during extreme cold periods as Port Joli and Port Hebert sanctuaries may freeze over while Sable River will remain partially open.

2. Criteria met. The area provides a place relatively free from human disturbance and hunting pressure.

3. Criteria met. Along with Port Joli and Port Hebert sanctuary supports the largest wintering populations of geese in the area (30% of Atlantic Region wintering Canada Goose population).

4. Criteria met. Along with the other sanctuaries in south-western Nova Scotia it figures high in the overall management of waterfowl in the region. This site is often used by naturalist groups, ecotourism and others in community for bird watching.

Recommendations

1. Retain the sanctuary in its present configuration.

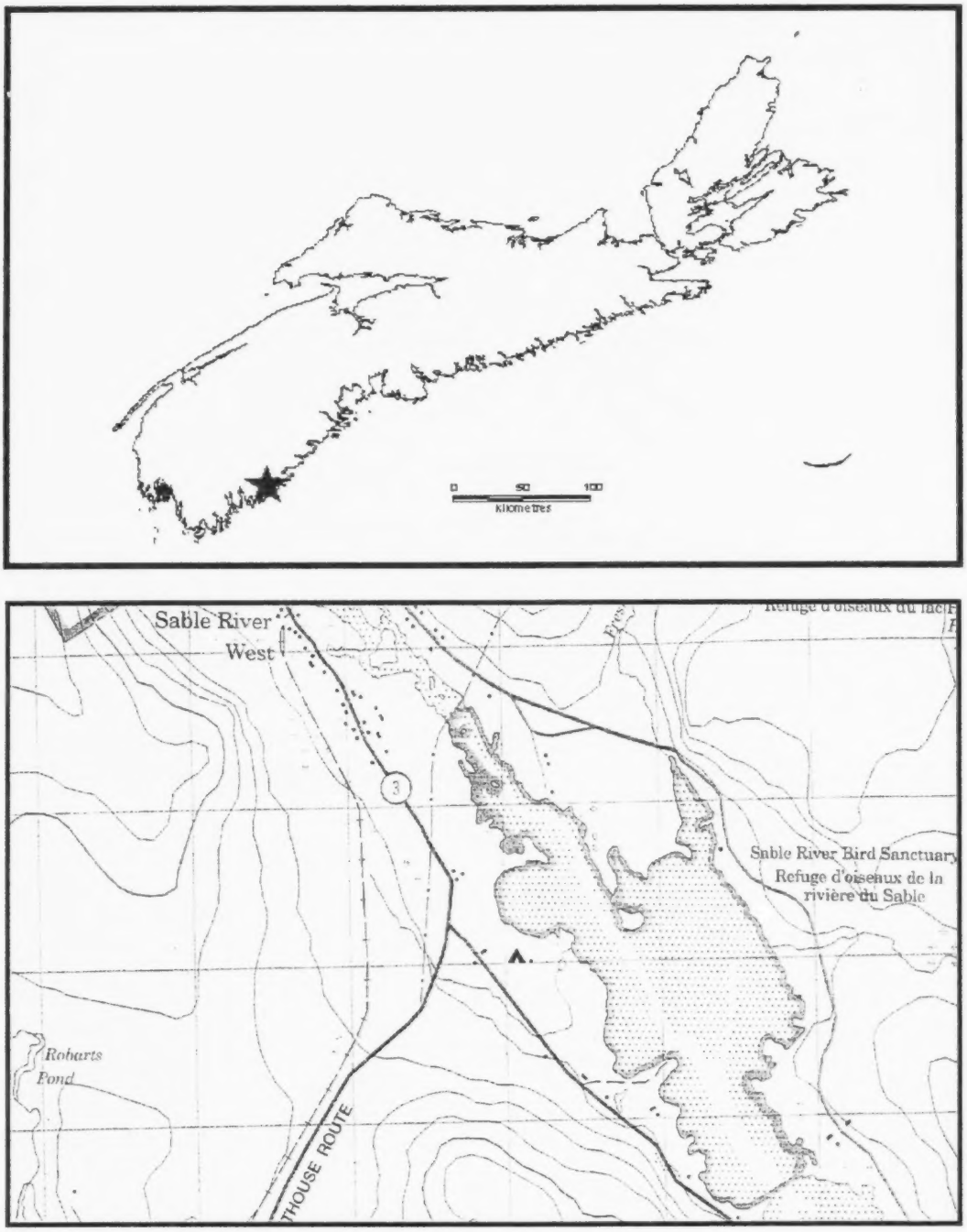

Figure 14. Sable River Migratory Bird Sanctuary Locator Map

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Shepherd Island Migratory Bird Sanctuary

Location

Province of Newfoundland, in the District of Strait of Belle Isle
Latitude: 50°23'00"N Longitude: 55°39'40"W
National Topographic Series: 1:50 000 2L/12 (Grey Islands Habour)

Area

Thirteen and a half hectares and includes all water and any small islets and rocks lying within the quadrilateral defined by points having Geographical Co-ordinates: latitude 50°43'50" north and longitude 55°39'30" west; latitude 50°43'50" north and longitude 55°39'50" west; latitude 50°44'05" north and longitude 55°39'50" west; and latitude 50°44'05" north and longitude 55°39'30" west.

Land Ownership

Provincial Crown.

Maior Habitat Types

Patchy vegetation consisting mainly of ericaceous plants, lichen and moss along with limited areas of salt marsh cord grass and cow parsnip.

Description of Area

Shepherd Island is a rugged island with bedrock outcrops. The backshore areas are generally somewhat precipitous, but not vertical, and sea wash can be considerable. Brood rearing occurs in a cove on the north-east side of the island.

Public Use

As it is a remote site any public use would be limited. Some use in the past by fishermen and hunters would be likely.

Importance to the Resource

Based on the most recent census the population has seen a marked decline from 86 nesting pairs of Common Eider observed by Goudie in 1988 to 2 pairs in 2001 observed by Gilliland. Nesting is in either the ericaceous vegetation or in more open locations. Despite the decline on Shepherd Island it is possible that birds from here are recruited to nearby Green Island. An estimated breeding capacity for the island is approximately 1000 pairs. This site along with Isle aux Canes represents one of the few areas in the region where breeding eiders have not made a comeback since being given special attention under the Migratory Bird Conventions Act of

1916. The sanctuary is also of inter-provincial significance in that any increases in the Newfoundland breeding population will help reduce hunting pressure on the Quebec and northern breeding stock.

The site is important breeding habitat for Common Eider that has approximately 800-900 breeding pairs found here. Combined with Green Island, it is the largest site for eiders in Insular Newfoundland or about 25% of the population.

Species at Risk

There is little information on this island regarding species at risk. Mountain Sorrel (*Oxyria digyna*), which is considered rare throughout its range in the Atlantic Region has been found nearby the sanctuary.

Historical and Present Land Use Conflicts

There is little information available but the site has been known to be subject to eider duck poaching and possibly has seen seasonal use for fishing camps.

First Nations

There are no major First Nation Reserves on the island of Newfoundland;

Protective Status and Enforcement

Migratory Bird Sanctuary Regulations-1994.

Selection Criteria Met

1. Criteria met. The current population estimates for this sanctuary are extremely low. But along with Isle aux Canes it has very good potential to have a viable population. This cannot be achieved without its protection as a sanctuary.

2. Criteria met. Eiders, for which the sanctuary was designated, require secluded nesting areas free from predation and human disturbance. As result of these requirements they tend to be restricted to offshore islands in coastal areas.

3. Criteria met. Combined with Isle aux Canes supports largest colony in the area.

4. Criteria met. For the overall management of eider populations this sanctuary plays an important part in bringing numbers to stable levels. Due to its remoteness and difficulty in getting to the site, there is little opportunity for direct educational or interpretative purposes.

Recommendations

1. Requires an inspection visit at least every two years.

2. Need to consider options for increasing the population through protective measures such as gull control and nest box installation or other techniques.

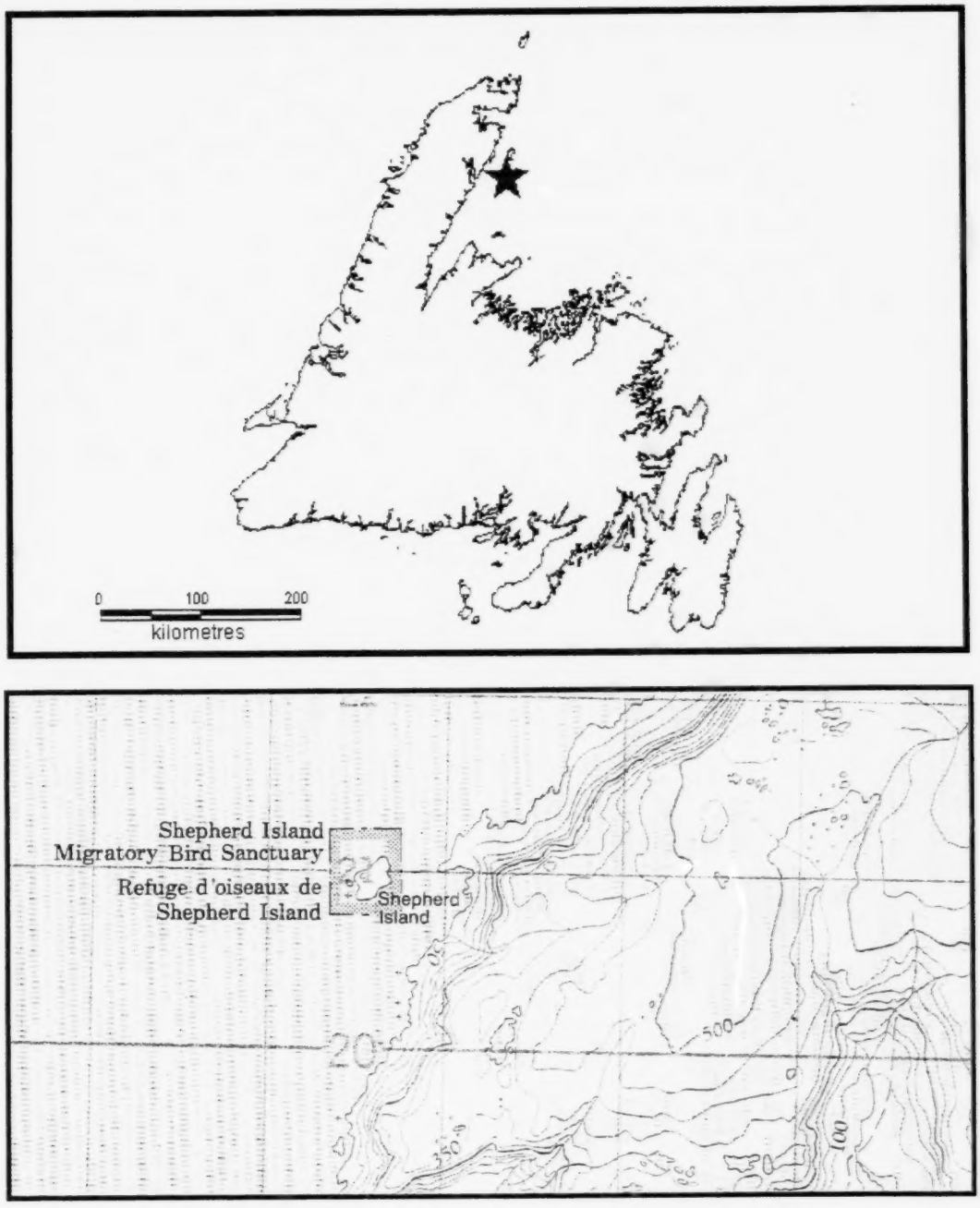

Figure 15. Shepherd Island Migratory Bird Sanctuary Locator Map

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Terra Nova Migratory Bird Sanctuary

Location

Bonavista Bay Region of north-eastern Newfoundland, adjacent to Terra Nova National Park.
Latitude: 48°34' N Longitude: 53°57'W (Inner Newman Sound)
Latitude: 48°38' N Longitude: 53°56'W (Southwest Arm)
National Topographic Series: 1: 50 000 2C/12 (Eastport)

Area 870 hectares

Land Ownership

Not deeded- the Sanctuary covers only tidal waters and flats. The surrounding land is part of Terra Nova National Park.

Major Habitat Types

Open Water..... 91%
Tidal Flats 9%

Description of Area

The sanctuary consists of the upper portions of two tidal inlets that are nearly totally enclosed by lands within the Terra Nova National Park. The northern portion (2.5 km squared) consists of Broad Cove and Southwest Arm, which are separated by a causeway and a bridge. The other section is the most westerly portion of Newsman Sound and is about 6.2 km squared. The areas are relatively shallow tidal inlets with inter-tidal flats in their upper reaches, the largest being the Big Brook Tidal Flats at the head of Newman Sound.

The two bodies of water form part of the north-eastern shoreline of Terra Nova National Park. The shoreline is characterized by small gravel beaches or pockets of large rounded boulders and in places cliffs steeply rising to the adjoining wooded upland.

Public Use

Inner Newman Sound receives a lot of use through pleasure boating activities, especially during the summer. Some commercial fishing occurs in the area-seining for mackerel and herring and lobster fishing during spring. Bird watching tours and interpretative beach walks are conducted during summer by the staff at Terra Nova National Park.

Importance to the Resource

The two inlets are rich marine environments with Newman Sound having been recommended as

an Ecological Reserve under the International Biological Programme (IBP) while it was administered in the early 1970's.

Nearly half of the species of birds recorded at Terra Nova National Park have been observed in or over the sanctuary. The main species groups are shorebirds, waterfowl and seabirds. A few hundred geese, Black Duck, Goldeneye and mergansers use the sanctuary during fall migration and shorebirds frequent the tidal flats during the summer and early fall. While the overall numbers of migratory birds using the site are not large, the number of species is impressive. Around 30 species are recorded regularly within Newman Sound and Southwest Arm.

The actual sanctuary portion of the Southwest Arm freezes during the winter months, which precludes the sanctuary from being an important over-wintering area for many of the wintering waterfowl in the area. Newman Sound conversely is an important area for waterfowl species throughout the year.

Species at Risk

Barrow's Goldeneye (*Bucephala islandica*) has been observed in small numbers, in the area of the sanctuary as well as in adjacent waters to the sanctuary. Harlequins have also been observed in the area. Most often they are observed using the area not within the sanctuary itself but the area adjacent to it (Stroud 2003). There are a number of plants that are rare provincially but not listed federally that occur within Terra Nova National Park that surrounds the sanctuary.

Historical and Present Land Use Conflicts

The original proposal for the sanctuary originated with Parks Canada in 1957. The ownership of Terra Nova National Park extended only to the low water mark and thus it was quite legal for people to shoot in these inlets that were bounded on three sides by National Park. However, the Government of Newfoundland did not concur with the proposal due to the fact that "seabirds to be obtained in these waters constitute one of the few sources of fresh meat that needy residents can obtain during winter months". The CWS thus dropped the sanctuary proposal until after the Park was officially opened. Subsequently the Government of Newfoundland was again approached and in 1965 concurred with the proposal "providing it would not prevent a person from fishing". Thus, the Sanctuary was formally established on 30th of November 1967 (PC# 1967-2224).

First Nations

There are no major First Nation Reserves on the island of Newfoundland.

Protective Status and Enforcement

Migratory Birds Sanctuary Regulations under the Migratory Birds Convention Act (PC# 1967-2224, November 30, 1967).Enforcement patrols are made by the RCMP and by Park Wardens at Terra Nova National Park.

Selection Criteria Met

1. Criteria Met. It supports migrating birds with suitable habitat, which is limited, along this portion of the coast of Newfoundland.

2. Criteria met. Species occurring here are susceptible to human disturbance.

3. Criteria not met.

4. Criteria met. The sanctuary complements protection to the area provided by the surrounding National Park. Parks Canada staff use area to put on interpretative walks and other educational events. The local community also places great value on having a sanctuary nearby.

Recommendations

1. Retain and ensure that adequate signage is maintained.

2. Maintain close communication with park staff and naturalists from the area.

0
100
200
kilometres

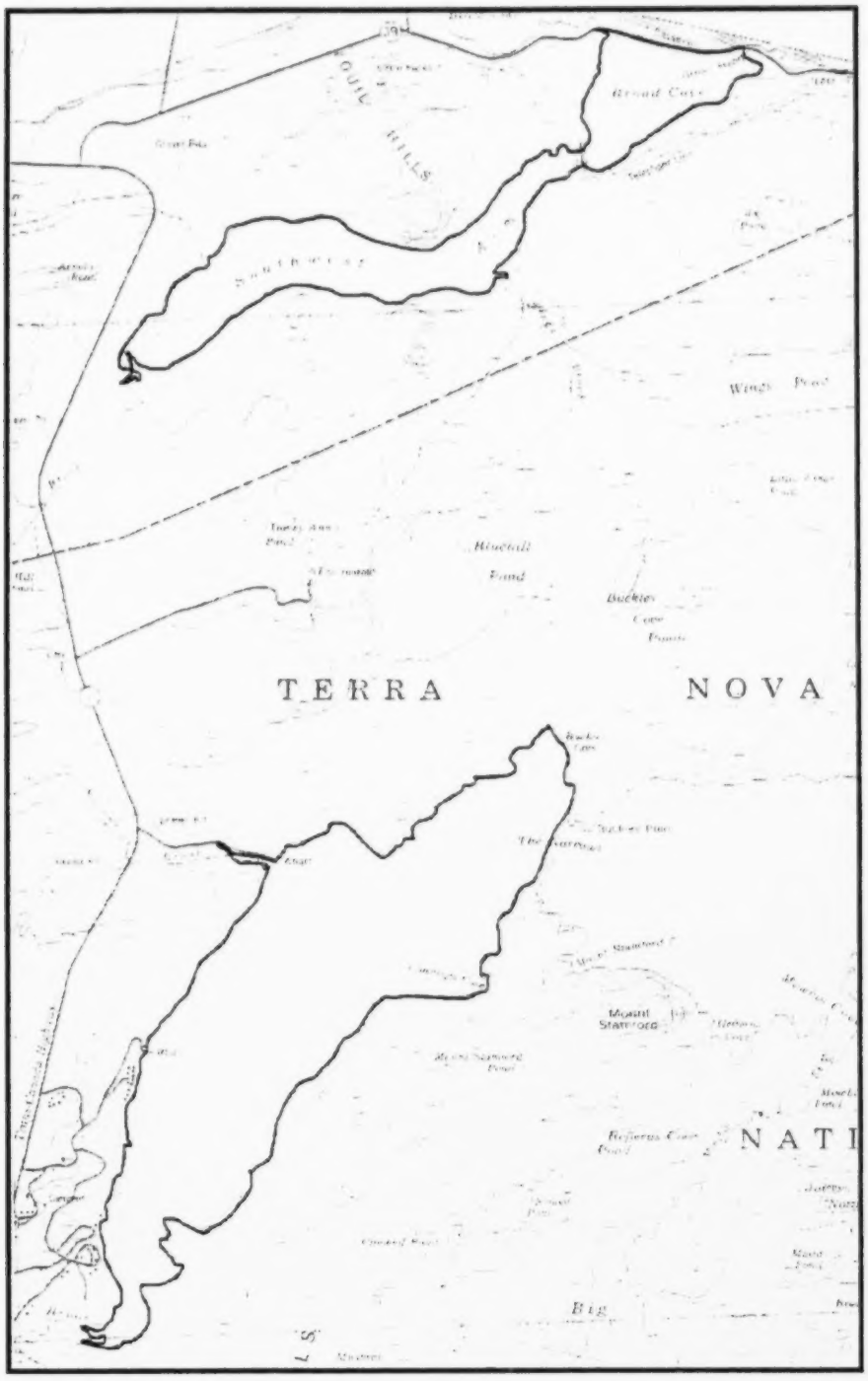

Figure 16. Terra Nova Migratory Bird Sanctuary Locator Map

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Appendix 1

Rare or Endangered species mentioned within review.
*Data in tables is from the Atlantic Canada Conservation Data Centre (AC-CDC); refer to original files for complete information and source acknowledgement.
**Glossary follows table in Appendix 2.

Migratory Bird Sanctuary	Latin Name	Common Name	AC-CDC Rank	Fed. Rank	Prov. Rank
1. Amherst Point	*Coenagrion resolutum*	Taiga Bluet	S1	-	-
	Coenagrion resolutum	Taiga Bluet	S1	-	-
	Coenagrion resolutum	Taiga Bluet	S1	-	-
	Dorocordulia libera	Racket-Tailed Emerald	S2	-	-
	Gomphus adelphus	Mustached Clubtail	S2	-	-
	Lestes unguiculatus	Lyre-Tipped Spreadwing	S2	-	-
	Lestes unguiculatus	Lyre-Tipped Spreadwing	S2	-	-
	Aeshna verticalis	Green-Striped Darner	S2	-	-
2. Big Glace Bay	*Charadrius melodus*	Piping Plover	S1B	E	E
	Sterna hirundo	Common Tern	S3B	NAR	-
	Asio flammeus	Short-eared Owl	S1S2B	SC	-
	Ammodramus nelsoni	Nelson's Sharp-tailed Sparrow	S2S3B	NAR	-
3. Black Pond	*Phalacrocorax carbo*	Great Cormorant	S3B	-	-
4. Grand Manan	Charadrius melodus	Piping Plover	S1B	E	E
	Danaus plexippus	Monarch	S2B	SC	-
	Ammodramus nelsoni	Nelson's Sharp-tailed Sparrow	S3B	NAR	-
5. Haley Lake	See below	-	-	-	-
6. Inkerman	See below	-	-	-	-
7. Isle aux Canes (Green Island)	See below	-	-	-	-
8. Kentville	See below	-	-	-	-
9. Machias Seal Island	*Sterna dougallii*	Roseate Tern	S1B	E	E
	Sterna hirundo	Common Tern	S3B	NAR	-
	Danaus plexippus	Monarch	S2B	SC	-
10. Port Hebert	*Charadrius melodus*	Piping Plover	S1B	-	-
	Alnus serrulata	Brook-Side Alder	S2	-	-
11. Port Joli	*Goodyera tesselata*	Checkered Rattlesnake-Plantain	S3	E	-
	Liparis loeselii	Loesel's Twayblade	S3S4	-	-
	Isoetes lacustris	Lake Quillwort	S2S3	-	-
12. Sable Island	Sterna dougallii	Roseate Tern	S1B	E	E

	Dicranum condensatum	a Moss	S1	-	-
	Hieracium scabrum var. leucocaule	Rough Hawkweed	S1	-	-
	Crassula aquatica	Water Pigmy-Weed	S2	-	-
	Crassula aquatica	Water Pigmy-Weed	S2	-	-
	Crassula aquatica	Water Pigmy-Weed	S2	-	-
	Anagallis minima	Chaffweed	S1	-	-
	Anagallis minima	Chaffweed	S1	-	-
	Anagallis minima	Chaffweed	S1	-	-
	Juncus bulbosus	Bulbous Rush	S1	-	-
	Juncus bulbosus	Bulbous Rush	S1	-	-
	Juncus bulbosus	Bulbous Rush	S1	-	-
	Coeloglossum viride var. virescens	Long-Bract Green Orchis	S2	-	-
	Coeloglossum viride var. virescens	Long-Bract Green Orchis	S2	-	-
	Potamogeton oblongus	Cinnamon-Spot Pondweed	S1	-	-
	Centunculus minimus	chaffweed	-	-	-
	Juncus bulbosus	bulbrush	-	-	-
	Juncus pelocarpus var.sabulonensis	rush	-	-	-
	Potamogeton oblongus	oblong-leaved pondweed	-	-	-
	Seneciopseudo-arnica	false arnica ragwort	-	-	-
	Coelogossum viride var. virscens	American frog-orchid	-	-	-
	Tillaea aquatica	pygmy-weed	-	-	
13. Sable River	*Schizaea pusilla*	Curly-Grass Fern	S3	-	-
14. Shepherd Island	*Oxyria digyna*	Mountain Sorrel	S2	-	-
15. Terra Nova	See below	-	-	-	-

Haley Lake-MBS

None listed of significance in or within a reasonable distance to the sanctuary. Many plants and animals are in the area but none are in the sanctuary or fall within the federal species at risk designation.

Inkerman-MBS

None listed of significance in or within a reasonable distance to the sanctuary. Many plants and animals that are considered rare are in the area but none are within the sanctuary or designated as federal species at risk.

Ile aux Canes (Green Island)-MBS

None listed of significance in or within a reasonable distance to the sanctuary. Many plants and animals are in the area but none are in the sanctuary or fall within the federal species at risk designation.

Kentville-MBS

None listed of significance in or within a reasonable distance to the sanctuary. Many plants and animals are in the area but none are in the sanctuary or fall within the federal species at risk designation.

Terra Nova-MBS

No plants of significance in or within a reasonable distance to the sanctuary.

Appendix 2

Ranking System Glossary for data from the Atlantic Conservation Data Centre (AC-CDC)

Sub-national Rank Definitions: S-ranks

S1 Extremely rare throughout its range in the province (typically 5 or fewer occurrences or very few remaining individuals). May be especially vulnerable to extirpation.

S2 Rare throughout its range in the province (6 to 20 occurrences or few remaining individuals). May be vulnerable to extirpation due to rarity or other factors.

S3 Uncommon throughout its range in the province, or found only in a restricted range, even if abundant in at some locations. (21 to 100 occurrences).

S4 Usually widespread, fairly common throughout its range in the province, and apparently secure with many occurrences, but the Element is of long-term concern (e.g. watch list). (100+ occurrences).

S5 Demonstrably widespread, abundant, and secure throughout its range in the province, and essentially ineradicable under present conditions.

S#S# Numeric range rank: A range between two consecutive numeric ranks. Denotes uncertainty about the exact rarity of the Element (e.g., S1S2).

SH Historical: Element occurred historically throughout its range in the province (with expectation that it may be rediscovered), perhaps having not been verified in the past 20 - 70 years (depending on the species), and suspected to be still extant.

SU Unrankable: Possibly in peril throughout its range in the province, but status uncertain; need more information.

SX Extinct/Extirpated: Element is believed to be extirpated within the province.

S? Unranked: Element is not yet ranked.

SA Accidental: Accidental or casual in the province (i.e., infrequent and far outside usual range). Includes species (usually birds or butterflies) recorded once or twice or only at very great intervals, hundreds or even thousands of miles outside their usu

SE Exotic: An exotic established in the province (e.g., Purple Loosestrife or Coltsfoot); may be native in nearby regions.

SE# Exotic numeric: An exotic established in the province that has been assigned a numeric rank.

SP Potential: Potential that Element occurs in the province, but no occurrences reported.

SR Reported: Element reported in the province but without persuasive documentation which would provide a basis for either accepting or rejecting the report (e.g., misidentified specimen).

SRF Reported falsely: Element erroneously reported in the province and the error has persisted in the literature.

SZ Not of practical conservation concern in the province, because there are no definable occurrences, although the species is native and appears regularly. An NZ rank will generally be used for long distance migrants whose occurrences during their migration

Qualifiers

Breeding Status B Breeding: Basic rank refers to the breeding population of the element in the province.

M Non-breeding, Migratory: Basic rank refers to the non-breeding migratory population of the element in the province.

N Non-breeding: Basic rank refers to the non-breeding population of the element in the province.

Other? Inexact or uncertain: for numeric ranks, denotes inexactness, e.g., SE? denotes uncertainty of exotic status. (The? qualifies the character immediately preceding it in the SRANK)

C Captive or cultivated: Element is presently extant in the country or province only in captivity or cultivation.

Global Rank Definitions: G-ranks

G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences or less than 1000 individuals) or because of extreme vulnerability to extinction due to some natural or man-made factor.

G2 Imperilled globally because of rarity (6 to 20 occurrences or less than 3000 individual) or because of vulnerability to extinction due to some natural or man-made factor.

G3 Either very rare and local throughout its range (21 to 100 occurrences or less than 10.000 individuals) or locally in a restricted range or vulnerable to extinction from other factors.

G4 Apparently secure globally (may be rare in parts of its range).

G5 Demonstrably secure globally.

GH Of historical occurrence throughout its range, may be rediscovered.

GX Believed to be extinct throughout its range.

GXC Extirpated in the wild but still known from captivity or cultivation.

G#? Tentative rank (eg. G2?)

G#G# Range of rank: insufficient data to assign specific global rank (e.g. G2G3).

G#T# Rank of a taxonomic subgroup such as a subspecies or variety; the G portion of the rank refers to the entire species and the T portion refers to the specific subgroup; numbers have same definitions as above (e.g. G3T1).

G#Q Rank of a questionable species - ranked as species but questionable whether it is a species or subspecies; numbers have same definitions as above (e.g. G2Q).

G#T#Q Same as above, but validity as subspecies or variety is questioned.

GU Due to lack of information, no rank or range can be assigned.

G? Not yet ranked (temporary).

Over 50% recycled
paper including 10%
post-consumer fiber